

ADMINISTRATIVE RECORD FILE

REMOVAL ACTION

SITE NAME: ELLA WAREHOUSE

SITE NUMBER: TXD988021416

VOLUME 1 OF 1

9526133



ADMINISTRATIVE RECORD FILE INDEX

FINAL

SITE NAME: ELLA WAREHOUSE

SITE NUMBER: TXD988021416

INDEX DATE: APRIL 3, 1992



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION 6

1445 ROSS AVENUE, SUITE 1200

DALLAS, TEXAS 75202-2733

FACT SHEET

Administrative Records in Local Repositories

The "administrative record" is the collection of documents which form the basis for the selection of a response action at a Superfund site. Under section 113(k) of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), as amended by the Superfund Amendments and Reauthorization Act (SARA), EPA is required to establish an administrative record for every Superfund response action and to make a copy of the administrative record file available at or near the site.

The administrative record file must be reasonably available for public review during normal business hours. The record file should be treated as a non-circulating reference document. This will allow the public greater access to the volumes and also minimize the risk of loss or damage. Individuals may photocopy any documents contained in the record file, according to the photocopying procedures at the local repository.

The documents in the administrative record file may become damaged or lost during use. If this occurs, the local repository manager should contact the EPA Regional Office for replacements. Documents may be added to the record file as the site work progresses. Periodically, EPA may send supplemental volumes and indexes directly to the local repository. These supplements should be placed with the initial record file.

The administrative record file will be maintained at the local repository until further notice. Questions regarding the maintenance of the record file should be directed to the EPA Regional Office.

The Agency welcomes written comments at any time on documents contained in the administrative record file. Please send any such comments to:

U.S. EPA
Removal Administrative Record Coordinator (6E-E)
1445 Ross Avenue
Dallas, TX 75202

COMMONLY USED ACRONYMS

ADPC&E	Arkansas Department of Pollution Control & Ecology
AO	Administrative Order
ATSDR	Agency for Toxic Substances and Disease Registry
CDC	Center for Disease Control
CERCLA	Comprehensive Environmental Response Compensation & Liability Act of 1980
CFR	Code of Federal Regulations
EPA	United States Environmental Protection Agency
ERB	Emergency Response Branch
ERCS	Emergency Response & Cleanup Services
FOIA	Freedom of Information Act
LDEQ	Louisiana Department of Environmental Quality
NPL	National Priorities List
NMEID	New Mexico Environmental Improvement Division
OSDH	Oklahoma State Department of Health
OSC	On-Scene Coordinator
OSHA	Occupational Safety and Health Administration
POLREP	Pollution Report
PRP	Potentially Responsible Party
RCRA	Resource Conservation and Recovery Act of 1976
ROC	Record of Communication
SARA	Superfund Amendments and Reauthorization Act of 1986
TAT	Technical Assistance Team
TWC	Texas Water Commission
TDWR	Texas Department of Water Resources

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SITE NAME: ELLA WAREHOUSE
SITE NUMBER: TXD988021416

RECORD NUMBER: 1
DOCUMENT DATE: Undated
NUMBER OF PAGES: 1
AUTHOR: Unspecified
COMPANY/AGENCY: Unspecified
RECIPIENT: Unspecified
DOCUMENT TYPE: Article with Handwritten Notes
DOCUMENT TITLE: Titled "Polychlorinated Biphenyls
(PCBs)". (page 1)

RECORD NUMBER: 2
DOCUMENT DATE: Undated
NUMBER OF PAGES: 1
AUTHOR: Unspecified
COMPANY/AGENCY: Unspecified
RECIPIENT: Unspecified
DOCUMENT TYPE: Article
DOCUMENT TITLE: Titled "Why are PCBs Harmful to Our
Health and Environment?" and "What is
EPA Doing About PCBs?". (page 2)

RECORD NUMBER: 3
DOCUMENT DATE: Undated
NUMBER OF PAGES: 8
AUTHOR: Unspecified
COMPANY/AGENCY: Unspecified
RECIPIENT: Unspecified
DOCUMENT TYPE: Fact Sheet
DOCUMENT TITLE: Information on Polychlorinated
Biphenyls. (pp 3-10)

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SITE NAME: ELLA WAREHOUSE
SITE NUMBER: TXD988021416

RECORD NUMBER: 7
DOCUMENT DATE: 01/24/85
NUMBER OF PAGES: 3
AUTHOR: Don R. Clay, Director, Office of Toxic Substances
COMPANY/AGENCY: EPA, Washington
RECIPIENT: Robert G. Layman, President, Chemical Decontamination Corp.
DOCUMENT TYPE: Letter
DOCUMENT TITLE: Gives information concerning the "Approval to Dispose of Polychlorinated Biphenyls", which is effective 1/25/85 to 1/25/88. (pp 18-20)

RECORD NUMBER: 8
DOCUMENT DATE: 01/25/85
NUMBER OF PAGES: 11
AUTHOR: Don R. Clay, Director, Office of Toxic Substances
COMPANY/AGENCY: EPA, Washington
RECIPIENT: Chemical Decontamination Corp.
DOCUMENT TYPE: Approval to Dispose of PCBs
DOCUMENT TITLE: Chemical Decontamination Corporation is granted approval to dispose of PCBs, under certain conditions. (pp 21-31)

RECORD NUMBER: 9
DOCUMENT DATE: 01/01/86
NUMBER OF PAGES: 7
AUTHOR: Unspecified
COMPANY/AGENCY: New Jersey Department of Health
RECIPIENT: Unspecified
DOCUMENT TYPE: Fact Sheet
DOCUMENT TITLE: Information on Sodium Hydroxide. (pp 32-38)

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SITE NAME: ELLA WAREHOUSE
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RECORD NUMBER: 10
DOCUMENT DATE: 02/24/88
NUMBER OF PAGES: 3
AUTHOR: Unspecified
COMPANY/AGENCY: Unspecified
RECIPIENT: Unspecified
DOCUMENT TYPE: Handwritten Notes
DOCUMENT TITLE: Notes on telephone conversation with
Bob Layman dated 2/24/88, and notes on
Dr. Harold Rockaway dated 2/25/88. (pp
39-41)

RECORD NUMBER: 11
DOCUMENT DATE: 03/29/88
NUMBER OF PAGES: 2
AUTHOR: John H. Smith, Ph.D., Chief, PCB
Disposal Section
COMPANY/AGENCY: EPA, Washington
RECIPIENT: Harold Rockaway
DOCUMENT TYPE: Letter
DOCUMENT TITLE: Unable to contact Chemdecon. Chemdecon
PCB disposal permit has not been
renewed. Gives conditions for renewal
consideration. (pp 42-43)

RECORD NUMBER: 12
DOCUMENT DATE: 05/01/89
NUMBER OF PAGES: 7
AUTHOR: Unspecified
COMPANY/AGENCY: New Jersey Department of Health
RECIPIENT: Unspecified
DOCUMENT TYPE: Fact Sheet
DOCUMENT TITLE: Information on Polychlorinated
Biphenyls. (pp 44-50)

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SITE NAME: ELLA WAREHOUSE
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RECORD NUMBER: 13
DOCUMENT DATE: 11/20/90
NUMBER OF PAGES: 2
AUTHOR: Carroll
COMPANY/AGENCY: EPA, Region 6
RECIPIENT: File
DOCUMENT TYPE: Notification Report Form
DOCUMENT TITLE: Houston Health Dept. reports abandoned lot with approximately 130 drums of unknown material on Ella Blvd. Suspect PCB. (pp 51-52)

RECORD NUMBER: 14
DOCUMENT DATE: 11/21/90
NUMBER OF PAGES: 3
AUTHOR: John Martin
COMPANY/AGENCY: EPA, Region 6
RECIPIENT: Director, ERD, EPA, Region 6
DOCUMENT TYPE: POLREP
DOCUMENT TITLE: Visit to Ella Warehouse confirms drums labeled "Hazardous Waste D003", "PCB's", "Sodium Metal in Oil", and "Dangerous When Wet". Immediate action required. (pp 53-55)

RECORD NUMBER: 15
DOCUMENT DATE: 11/26/90
NUMBER OF PAGES: 1
AUTHOR: Pat Y. Spillman, Jr., Assistant Regional Counsel
COMPANY/AGENCY: EPA, Region 6
RECIPIENT: John Martin, OSC, EPA, Region 6
DOCUMENT TYPE: Memorandum
DOCUMENT TITLE: Information on "Consent For Access To Property Form" for the Ella Warehouse Drums Site. (page 56)

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SITE NAME: ELLA WAREHOUSE
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RECORD NUMBER: 16
DOCUMENT DATE: 11/27/90
NUMBER OF PAGES: 1
AUTHOR: John Smith, Office of Toxic Substances
COMPANY/AGENCY: EPA, Washington
RECIPIENT: Michelle Kelly, EPA, Region 6
DOCUMENT TYPE: Fax Cover Sheet
DOCUMENT TITLE: Cover Sheet for: 1/24/85 Clay letter
to Layman, 1/25/85 EPA Approval to
Dispose of PCBs, 3/29/88 Smith letter
to Rockaway, and notes dated 2/24/88.
(page 57)

RECORD NUMBER: 17
DOCUMENT DATE: 11/28/90
NUMBER OF PAGES: 1
AUTHOR: John Martin
COMPANY/AGENCY: EPA, Region 6
RECIPIENT: Robert Contreras, Superfund Finance
Section Chief, EPA, Region 6
DOCUMENT TYPE: Request for Site Identifier Approval
DOCUMENT TITLE: Requests approval for Removal
Enforcement. (page 58)

RECORD NUMBER: 18
DOCUMENT DATE: 11/29/90
NUMBER OF PAGES: 1
AUTHOR: John Martin
COMPANY/AGENCY: EPA, Region 6
RECIPIENT: File
DOCUMENT TYPE: Record of Communication
DOCUMENT TITLE: Russell Rhoades, Director of the
Environmental Services Division,
authorizes \$40,000 to activate ERCS.
(page 59)

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SITE NAME: ELLA WAREHOUSE
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RECORD NUMBER: 19
DOCUMENT DATE: 11/30/90
NUMBER OF PAGES: 1
AUTHOR: Betty Ferguson, Owner
COMPANY/AGENCY: Unspecified
RECIPIENT: EPA
DOCUMENT TYPE: Consent for Access to Property
DOCUMENT TITLE: Gives EPA access to Ella Blvd.
property to perform a response action.
(page 60)

RECORD NUMBER: 20
DOCUMENT DATE: 11/30/90
NUMBER OF PAGES: 2
AUTHOR: Illegible
COMPANY/AGENCY: Unspecified
RECIPIENT: Unspecified
DOCUMENT TYPE: Handwritten Notes
DOCUMENT TITLE: Log of activities at Ella Warehouse.
(pp 61-62)

RECORD NUMBER: 21
DOCUMENT DATE: 12/12/90
NUMBER OF PAGES: 4
AUTHOR: Unspecified
COMPANY/AGENCY: Ecology and Environment, Inc.
RECIPIENT: Unspecified
DOCUMENT TYPE: Report
DOCUMENT TITLE: Lists and describes contents of drums
at Ella Warehouse. [Date is Fax date.]
(pp 63-66)

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SITE NAME: ELLA WAREHOUSE
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RECORD NUMBER: 22
DOCUMENT DATE: 01/02/91
NUMBER OF PAGES: 1
AUTHOR: Pat Y. Spillman, Jr., Office of
Regional Counsel
COMPANY/AGENCY: EPA, Region 6
RECIPIENT: John Martin, EPA, Region 6
DOCUMENT TYPE: Memorandum
DOCUMENT TITLE: Understands Roy Hairston is the legal
owner of the Ella Warehouse Site. Betty
Ferguson may not have the authority to
sign the Access Consent Form. (page
67)

RECORD NUMBER: 23
DOCUMENT DATE: 01/02/91
NUMBER OF PAGES: 1
AUTHOR: Unspecified
COMPANY/AGENCY: EPA, Region 6
RECIPIENT: Confidential File
DOCUMENT TYPE: Record of Meeting/Confidential
DOCUMENT TITLE: Enforcement Confidential Document.
Located in a separate, Confidential
File. (page 68)

RECORD NUMBER: 24
DOCUMENT DATE: 01/11/91
NUMBER OF PAGES: 1
AUTHOR: Tony Robledo, Superfund Enforcement
COMPANY/AGENCY: EPA, Region 6
RECIPIENT: John Martin, EPA, Region 6
DOCUMENT TYPE: Memorandum
DOCUMENT TITLE: Requests legal description of the Ella
Blvd. Warehouse site. (page 69)

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SITE NAME: ELLA WAREHOUSE
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RECORD NUMBER: 25
DOCUMENT DATE: 01/11/91
NUMBER OF PAGES: 18
AUTHOR: Diana G. Ayers, Chief, Houston Branch
COMPANY/AGENCY: EPA, Region 6
RECIPIENT: Charles Gazda, Chief, Emergency
Response Branch, EPA, Region 6
DOCUMENT TYPE: Laboratory Report
DOCUMENT TITLE: Laboratory results for Chemical
Decontamination Corp. Analytical
results for seven samples received on
12/4/90. (pp 70-87)

RECORD NUMBER: 26
DOCUMENT DATE: 02/01/91
NUMBER OF PAGES: 1
AUTHOR: Unspecified
COMPANY/AGENCY: EPA, Region 6
RECIPIENT: Confidential File
DOCUMENT TYPE: Record of Meeting/Confidential
DOCUMENT TITLE: Enforcement Confidential Document.
Located in a separate, Confidential
File. (page 88)

RECORD NUMBER: 27
DOCUMENT DATE: 02/06/91
NUMBER OF PAGES: 29
AUTHOR: Leroy Cassidy, Technical Services
Director
COMPANY/AGENCY: Riedel-Peterson Environmental Services
RECIPIENT: John Martin, OSC, EPA, Region 6
DOCUMENT TYPE: Letter and Report
DOCUMENT TITLE: Letter and procedures for attached
Hazardous Catagorization Report dated
12/5/90. (pp 89-117)

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SITE NAME: ELLA WAREHOUSE
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RECORD NUMBER: 28
DOCUMENT DATE: 02/26/91
NUMBER OF PAGES: 2
AUTHOR: J. Shields
COMPANY/AGENCY: Ecology and Environment, Inc.
RECIPIENT: John Martin, EPA
DOCUMENT TYPE: Record of Communication
DOCUMENT TITLE: Relates results of conversation with
Harris County Tax Office regarding
legal owner of Ella Road Warehouse.
(pp 118-119)

RECORD NUMBER: 29
DOCUMENT DATE: 02/28/91
NUMBER OF PAGES: 3
AUTHOR: J. Shields
COMPANY/AGENCY: Ecology and Environment, Inc.
RECIPIENT: John Martin, EPA
DOCUMENT TYPE: Record of Communication
DOCUMENT TITLE: Information from conversations with
the Secretary of State Office and a
Mr. Fields about ownership of Ella Rd.
Warehouse. (pp 120-122)

RECORD NUMBER: 30
DOCUMENT DATE: 04/04/91
NUMBER OF PAGES: 6
AUTHOR: Unspecified
COMPANY/AGENCY: Unspecified
RECIPIENT: Unspecified
DOCUMENT TYPE: Summary Report
DOCUMENT TITLE: Cost Projection for cleanup of Ella
Warehouse Drums. (pp 123-128)

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SITE NAME: ELLA WAREHOUSE
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RECORD NUMBER: 31
DOCUMENT DATE: 04/30/91
NUMBER OF PAGES: 1
AUTHOR: Unspecified
COMPANY/AGENCY: EPA, Region 6
RECIPIENT: Confidential File
DOCUMENT TYPE: Record of Meeting/Confidential
DOCUMENT TITLE: Enforcement Confidential Document.
Located in a separate, Confidential
File. (page 129)

RECORD NUMBER: 32
DOCUMENT DATE: 05/31/91
NUMBER OF PAGES: 1
AUTHOR: John Martin
COMPANY/AGENCY: EPA, Region 6
RECIPIENT: File
DOCUMENT TYPE: Record of Communication
DOCUMENT TITLE: It is not in the best interest to
request TWC to complete the removal
action at Ella Warehouse Drums. (page
130)

RECORD NUMBER: 33
DOCUMENT DATE: 06/25/91
NUMBER OF PAGES: 15
AUTHOR: John J. Martin, OSC
COMPANY/AGENCY: EPA, Region 6
RECIPIENT: Robert E. Layton, Jr., P.E., Regional
Administrator, EPA, Region 6
DOCUMENT TYPE: Action Memorandum
DOCUMENT TITLE: Requests approval for additional funds
to complete the removal action at Ella
Warehouse Drums Site. (pp 131-145)

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SITE NAME: ELLA WAREHOUSE
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RECORD NUMBER: 34
DOCUMENT DATE: 06/25/91
NUMBER OF PAGES: 1
AUTHOR: Sam Becker, Chief, Superfund
Enforcement Branch
COMPANY/AGENCY: EPA, Region 6
RECIPIENT: Charles Gazda, Chief, Emergency
Response Branch, EPA, Region 6
DOCUMENT TYPE: Enforcement Attachment/Confidential
DOCUMENT TITLE: Enforcement Attachment to the Action
Memorandum dated 6/25/91, is
Confidential, and located in a
separate, Confidential File. (page
146)

RECORD NUMBER: 35
DOCUMENT DATE: 07/16/91
NUMBER OF PAGES: 40
AUTHOR: Allyn M. Davis, Director, Hazardous
Waste Management Division
COMPANY/AGENCY: EPA, Region 6
RECIPIENT: Harold Rockaway
DOCUMENT TYPE: Notice Letter with Attachments
DOCUMENT TITLE: Notice of a response action conducted
by EPA and notification of potential
liability with respect to the Ella
Warehouse Drums Site. (pp 147-186)

RECORD NUMBER: 36
DOCUMENT DATE: 08/19/91
NUMBER OF PAGES: 1
AUTHOR: Tony Robledo, Superfund Enforcement
COMPANY/AGENCY: Unspecified
RECIPIENT: Pat Spillman, Assistant Regional
Counsel
DOCUMENT TYPE: Record of Communication/Confidential
DOCUMENT TITLE: Enforcement Confidential Document.
Located in a separate, Confidential
File. (page 187)

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SITE NAME: ELLA WAREHOUSE
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RECORD NUMBER: 37
DOCUMENT DATE: 08/22/91
NUMBER OF PAGES: 1
AUTHOR: Pat Y. Spillman, Jr., Assistant
Regional Counsel
COMPANY/AGENCY: EPA
RECIPIENT: Mary Lee Pieper, Butler & Binion
DOCUMENT TYPE: Letter
DOCUMENT TITLE: Agrees to extend the negotiation
period for removal action until
9/25/91. (page 188)

RECORD NUMBER: 38
DOCUMENT DATE: 09/05/91
NUMBER OF PAGES: 1
AUTHOR: Tony Robledo, Superfund Enforcement
COMPANY/AGENCY: Unspecified
RECIPIENT: Pat Spillman, Assistant Regional
Counsel
DOCUMENT TYPE: Record of Communication/Confidential
DOCUMENT TITLE: Enforcement Confidential Document.
Located in a separate, Confidential
File. (page 189)

RECORD NUMBER: 39
DOCUMENT DATE: 09/18/91
NUMBER OF PAGES: 1
AUTHOR: Pat Spillman and Tony Robledo
COMPANY/AGENCY: EPA, Region 6
RECIPIENT: Mary Lee Pieper, Butler & Binion
DOCUMENT TYPE: Record of Communication/Confidential
DOCUMENT TITLE: Enforcement Confidential Document.
Located in a separate, Confidential
File. (page 190)

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SITE NAME: ELLA WAREHOUSE
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RECORD NUMBER: 40
DOCUMENT DATE: 09/25/91
NUMBER OF PAGES: 6
AUTHOR: Kenneth D. Temple
COMPANY/AGENCY: Riedel Environmental Services, Inc.
RECIPIENT: Tony Robledo, Superfund Enforcement,
EPA, Region 6, and Sid Chesnin
DOCUMENT TYPE: Handwritten Data
DOCUMENT TITLE: Lists drums and contents. (pp 191-196)

RECORD NUMBER: 41
DOCUMENT DATE: 10/01/91
NUMBER OF PAGES: 1
AUTHOR: Tony Robledo, Superfund Enforcement
COMPANY/AGENCY: EPA, Region 6
RECIPIENT: Steve Wells, OCI, EPA, Region 6
DOCUMENT TYPE: Record of Communication/Confidential
DOCUMENT TITLE: Enforcement Confidential Document.
Located in a separate, Confidential
File. (page 197)

RECORD NUMBER: 42
DOCUMENT DATE: 10/03/91
NUMBER OF PAGES: 4
AUTHOR: Pat Y. Spillman, Jr., Assistant
Regional Counsel
COMPANY/AGENCY: EPA, Region 6
RECIPIENT: Sidney Chesnin, Butler & Binion
DOCUMENT TYPE: Letter and Drum Summary
DOCUMENT TITLE: Drum Summary and analytical data
previously sent should assist client
in preparing proposal for removal and
disposal of drums. (pp 198-201)

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SITE NAME: ELLA WAREHOUSE
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RECORD NUMBER: 43
DOCUMENT DATE: 02/14/92
NUMBER OF PAGES: 4
AUTHOR: Unspecified
COMPANY/AGENCY: EPA, Region 6
RECIPIENT: File
DOCUMENT TYPE: Community Relations Plan
DOCUMENT TITLE: Summarizes background and details of
removal action at Ella Warehouse.
Procedures discussed with the local
community, and City and State
officials. [Date estimated.] (pp
201-205)

Polychlorinated Biphenyls (PCBs)

PCBs as a class of compounds has received a high degree of attention from the press, particularly in stories relating to incidents of spills, leaks and exposures to these materials. PCB is an acronym for *polychlorinated biphenyl*. The structure of this compound is relatively straightforward, consisting of two benzene rings connected with a covalent bond between two carbon atoms. PCBs are sometimes called chlorodiphenyls, a term NIOSH prefers. The structures of benzene, a phenyl "radical," and a diphenyl or biphenyl molecule.

The physical, chemical and toxicological properties of these compounds vary, but all forms are stable at elevated temperatures and are insoluble in water. Physical and chemical characteristics has made PCBs an excellent choice for use in transformers, capacitors, hydraulic fluids, printing inks, carbonless copy paper, paints etc.

There are many forms of PCBs representing 75 different

In animals, such toxic effects as liver tumors in rats, thinning in bird eggshells, lower egg production and birth defects have been noted. Certain acute and chronic toxic effects also have been noted in humans. The most common symptoms of severe exposure to PCBs include: Contact dermatitis, chloracne (a darkening or pigmentation of skin), skin rashes, itching, eye irritation, dry throat, headaches, dizziness, etc.

The release of PCBs into the environment from prior industrial uses went largely unchecked from the late 1920s until 1979. But after that, the toxic effect of PCBs have been recognized. PCBs are resistant to biological degradation. Most significant is the formation of toxic by products during manufacture or incomplete combustion of PCBs. Two species of special interest are chlorinated dibenzofurans and dioxin.

PCBs have been identified in soaps, ceiling tile, paints and paper food-packaging materials. PCBs have become one of the most ubiquitous of all contaminants. Tissue assays of more than 4000 samples in the 1970s suggest that the entire U.S. population is carrying some burden of PCBs. In 1973, the food and drug administration (FDA), first established tolerances for PCBs in certain foods, and in 1979, four of those tolerances were lowered. The tolerances are now 1.5 ppm (fat basis) in milk and manufactured dairy products, 3 ppm (fat basis) in poultry, 0.3 ppm in eggs, 0.2 ppm in finished animal products, 2 ppm in animal feed components, 2 ppm in fish and shellfish and 0.2 ppm in infant and junior foods.

PCB Toxicity

The same heat resistance properties that makes PCBs a desirable material for use in transformers and capacitors result in environmental stability of these compounds. Their biological persistence allows transport through the food chain, resulting in increased exposure and doses to animals higher up the chain.

- Flammable
- PCBs emit highly toxic vapors when heated to decomposition including CO, HCl, & Cl₂
- PCB exposures may initiate or aggravate skin, liver, lung, and nervous diseases. Acute exposure may initiate chloracne and eye irritation, dermatological signs associated with follicular keratosis, and various nervous symptoms. Occupational exposures have been related to chloracne, jaundice, and acute yellow liver atrophy.
- Probable Carcinogenic for humans
- mutagenicity & teratogen
- readily absorbed through the skin
- fumes are irritating to skin & eyes, vapors cause severe irritation of eyes & throat & can cause eye & lung injury

Why are PCBs Harmful to Our Health and Environment?

PCBs are harmful because once they are released into the environment, they tend not to break apart into other substances. Instead, PCBs persist and take several decades to slowly decompose. By remaining in the environment, they can be taken up and stored in the fatty tissues of all organisms from which they are slowly released into the blood stream. Therefore, due to storage in fat, the concentration of PCBs in the body tissues can increase with time even though PCB exposure levels may be very low. This process is called bioaccumulation. Further, as PCBs accumulate in the tissues of simple organisms, and as they are consumed by progressively higher organisms, the concentration increases. This process is called **biomagnification**. Through bioaccumulation and biomagnification, the cumulative quantity of PCBs consumed by man, who is at the end of the food chain, can be quite significant.

These two factors, bioaccumulation in organisms and biomagnification in the food chain, are especially significant because PCBs are harmful to health at low levels. Specifically, PCBs have been shown to cause chronic (long-term) toxic effects in some species of animals and aquatic species. Well-documented tests on laboratory animals show that various levels of PCBs can cause reproductive effects, gastric disorders, skin lesions, and cancerous tumors. PCBs may, even at low concentrations in water, reduce the supply of commercial fish, either through direct adverse effects on their development and juvenile growth or through reduction in populations of aquatic animals and plants which are the food sources for the fish.

PCBs may enter the body through the lungs, the gastrointestinal tract, and the skin. After absorption, PCBs are circulated in the blood throughout the body and are stored in fatty tissues and a variety of organs, including the liver, kidneys, lungs, adrenal glands, brain, heart, and skin.

PCBs pervade the environment. Measurable amounts of PCBs have been found in soils, water, fish, milk, and human tissue. PCBs have been found in fish from the Hudson River and the Great Lakes, in fish meal used as feed (as a result of a leaking heat exchanger), and in animal feed (as a result of a leaking transformer).

What is EPA Doing About PCBs?

In October 1976, Congress passed the Toxic Substances Control Act (TSCA) and, in section 6(e) of that law, specifically directed EPA to regulate PCBs. It should be noted that this was the only chemical substance specifically named in TSCA, because Congress believed that the chemical and toxicological properties of PCBs posed a significant risk to public health and the environment.

Section 6(e) of TSCA requires the proper disposal of PCBs, and prohibits their manufacture, processing, distribution in commerce, and use. EPA has issued regulations implementing these provisions. The following is a summary to date of these actions.

On May 31, 1979, EPA issued regulations effective July 1, 1979, to implement the Congressional ban on the manufacture, processing, distribution in commerce and use of PCBs, and to control the disposal of PCBs. EPA was sued by the Environmental Defense Fund

File 3; Entry 1; Accession No. 7216860

(CAS) CAS Registry Number: 1336-36-3

(MAT) Material Name: \$\$\$

(SYN) Synonyms: PCB; **PCBS**; POLYCHLORINATED BIPHENYL; POLYCHLORINATED BIPHENYL(S); POLYCHLOROBIPHENYL; POLYCHLOROBIPHENYLS; POLYCHLORINATED DIPHENYLS; 1,1'-BIPHENYL, CHLORINATED; 1,1'-BIPHENYL, CHLORO DERIVS.; BIPHENYL, CHLORINATED; BIPHENYL, POLYCHLORINATED; BIPHENYL, POLYCHLORO-; CHLORINATED BIPHENYL; CHLORINATED BIPHENYLS; CHLORINATED DIPHENYL; CHLORINATED DIPHENYLENE; CHLORINATED DIPHENYLS; CHLORO BIPHENYL; CHLORO 1,1-BIPHENYL; CHLORODIPHENYL; DIPHENYL, CHLORINATED; ASKARELS; AROCLOR, AROCLORS; AROCLOR 1262; AROCLOR 1268; AROCLOR 2565; AROCLOR 4465; **BRIEF PROFILES WITH SPECIFIC INFORMATION MAY BE FOUND IN OHM-TADS FOR THE FOLLOWING POLYCHLORINATED BIPHENYLS; THE CAS REGISTRY NUMBER AND OHM-TADS ACCESSION NUMBER FOLLOW IN PARENTHESES AFTER EACH NAME):**

AROCLOR 1016 (12674-11-2; 8500400); AROCLOR 1221 (11104-28-2; 8500401); AROCLOR 1232 (11115-74-5; 8500402); AROCLOR **1242** (52652-59-2; 8500403); AROCLOR 1248 (12672-29-6; 8500404); AROCLOR **1254** (11097-69-1; 8500405); AROCLOR 1260 (11096-82-5; 8500406).

(TRN) Tradename (Company): AROCLOR (**MONSANTO**); DYKANOL (FED. PAC. ELEC.); NOFLAMOL (WAGNER ELEC. CO.); CHLORENTOL (ALLIS-CHALMERS); INERTEEN (WESTINGHOUSE); PYRANOL (GE); **THERMINOL (MONSANTO)**; CHLOPHEN; CHLOREXTOL; CLOPHEN; COLPHEN; FENCOLOR; INERTEEN; KANACHLOR; KANECHLOR; MONTAR; PHENOCHLOR; PHENOCOLOR; PYRALENE; SANTOTHERM; SANTOTHERM FR; SOVOL; THERMINOL; THERMINOL FR 1.

(SPC) Species in Mixture: PCBS CONTAIN FROM TRACES UP TO 11% BIPHENYL; **SOME PCBS CONTAIN PARTS-PER-MILLION LEVELS OF CHLORINATED DIBENZOFURANS AND NAPHTHALENES.** TRANSFORMER-GRADE ASKARELS ARE USUALLY MIXTURES OF BIPHENYLS CONTAINING 42 TO 60% CHLORINE WITH UP TO 55% TRICHLOROBENZENE OR SOMETIMES 55% OF A MIXTURE OF TRICHLORO- AND TETRACHLOROBENZENE. THEY ALSO CONTAIN STABILIZERS SUCH AS GLYCIDYL PHENYL ETHER AND 3,4-EPOXYCYCLOHEXYLMETHYL-3,4-EPOXYCYCLOHEXANE CARBOXYLATE. (CRSOE* 77-225,77/NIOSH) COMMERCIAL PCBS AS MIGHT BE EXPECTED OF MIXTURES PREPARED BY FRACTIONAL DISTILLATION, CONTAIN SOMEWHAT DIFFERENT CONCENTRATIONS OF THE VARIOUS CHLORINATED BIPHENYLS; BUT THEIR SUBSTITUTION RATIOS ARE CONSISTENT ENOUGH SO THAT INFORMATION REGARDING IMPORTED PRODUCTS MAY BE CORRELATED WITH THAT GIVEN FOR SPECIFIC AROCLORS (WHOSE OHM-TADS ACCESSION NUMBERS MAY BE FOUND IN FIELD SYN). COMMERCIAL PRODUCTS INCLUDE THE AROCLORS PRODUCED IN THE UNITED STATES, GREAT BRITAIN, AND JAPAN; THE KANECHLORS (OR SANTOTHERMS) PRODUCED IN JAPAN; THE CLOPHENS PRODUCED IN GERMANY; AND THE PHENOCOLORS OR PYRALENES PRODUCED IN FRANCE. THE LAST TWO DIGITS OF THE DESIGNATIONS FOR AROCLORS 1221, 1242, 1248, 1254, AND 1260 REPRESENT THEIR NOMINAL CHLORINE CONCENTRATIONS. HOWEVER, AROCLOR 1016, CONTAINS 41% CHLORINE (AS TRI- AND TETRACHLORINATED BIPHENYLS). KANECHLOR 300 (42% CL) CORRESPONDS APPROXIMATELY TO AROCLOR 1242; KANECHLOR 400 (48% CL) CORRESPONDS TO AROCLOR 1248; KANECHLOR 500 AND CLOPHEN A-50 (EACH 54% CL) CORRESPOND TO AROCLOR 1254; AND KANECHLOR 600, CLOPHEN A-60, AND PHENOCOLOR DP6 (EACH 60%

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CL) CORRESPOND TO AROCLOR 1260. PRODUCTS WITH IDENTICAL NOMINAL CONCENTRATIONS OF CHLORINE MAY CONTAIN VERY DIFFERENT CONCENTRATIONS OF POLYCHLORINATED ~~DIBENZOFURANS~~ (PCDFS). PCDF

CONTENTS OF SPECIFIC GERMAN, FRENCH, AND JAPANESE PRODUCTS ARE

COMPARED WITH AROCLOR PCDF CONTENTS IN THE OHM-TADS PROFILES OF THE AROCLORS MENTIONED IN FIELD SYN. (CRSOE* 77-225,77/NIOSH) UPDATED 11/84.

(USS) Common Uses: COOLANTS IN TRANSFORMERS; FLUORESCENT LIGHT BALLASTS; ELECTRICAL INSULATION; PLASTICIZER; EPOXY PAINTS; CARBONLESS REPRODUCTION; PAPER LUBRICANTS; MUCH OF THE TOTAL PRODUCTION OF PCBs IS STILL IN USE AS DIELECTRIC (INSULATOR), HEAT-TRANSFER, OR HYDRAULIC FLUIDS. (DPIRDU 1,81/SAX) PCBs HAVE BEEN THE MAJOR COMPONENTS OF ASKARELS USED IN THE UNITED STATES SINCE 1932. ASKAREL IS A GENERIC TERM USED FOR A BROAD CLASS OF NONFLAMMABLE SYNTHETIC CHLORINATED HYDROCARBON INSULATING LIQUIDS USED IN ELECTRICAL CAPACITORS, TRANSFORMERS, NUCLEAR REACTORS, AND ACCESSORY EQUIPMENT. (CRSOE* 77-225,77/NIOSH) UPDATED 11/84.

(CON) Containers: FORMER PCB SHIPMENT CONTAINERS INCLUDE GLASS BOTTLES (5 L), EARTHENWARE (5 L), PLASTIC BOTTLES (5 L), AND METAL CANS AND DRUMS (30 AND 250 L, RESPECTIVELY) (B5EZAO 78/IMCO) (49CFR* 101.1) (RARADS 80/IATA) DOT (DEPARTMENT OF TRANSPORTATION) HAZARDOUS MATERIALS TABLE: **SPECIFIC PACKAGING REQUIREMENTS ARE CITED IN 49CFR 173.510** (GENERAL PACKAGING REQUIREMENTS). MAXIMUM NET QUANTITY IN ONE PACKAGE: NO LIMIT ON PASSENGER AIRCRAFT OR RAILCAR; NO LIMIT ON CARGO-ONLY AIRCRAFT. DEPARTMENT OF TRANSPORTATION OPTIONAL HAZARDOUS MATERIALS TABLE (49CFR*172.102,10-31-83/DOT): UN PACKING GROUP II. ICAO INSTRUCTIONS (ICAO**83/ICAO)--PACKING GROUP II; PACKING INSTRUCTIONS FOR PASSENGER AIRCRAFT 907 AND FOR CARGO AIRCRAFT 907. MAXIMUM NET QUANTITY IN ONE PACKAGE: 100 L ON PASSENGER AIRCRAFT, 220 L ON CARGO-ONLY AIRCRAFT. UPDATED 11/84.

(STO) General Storage Procedure: STORE PCBs IN ISOLATED AREAS WHERE THE DRUMS ARE NOT VULNERABLE TO DAMAGE FROM VEHICLES, FORKLIFTS, OR OTHER MOVING EQUIPMENT. (PCBA** 79/EPA) STORE AT AMBIENT TEMPERATURES WITH OPEN VENTING. (CGHCD* 78/USCG) UPDATED 12/84.

(HND) General Handling Procedure: WEAR GLOVES AND APRONS MADE OF NEOPRENE,

VITRON, OR POLYETHYLENE AND IMPERVIOUS SHOES. HANDLE ONLY WITH AN ADEQUATE VENTILATION SYSTEM. (CFCTS* 80-83/BUR) ~~DANGER-SUSPECT AGENT~~. DO NOT GET IN EYES OR ON SKIN OR CLOTHING. WEAR PROTECTIVE CLOTHING IMPERVIOUS TO PCBs: GLOVES, BOOTS, OVERSHOES, AND BIB-TYPE APRONS THAT COVER BOOT TOPS. FOR EYE PROTECTION, WEAR CHEMICAL SAFETY GOGGLES, FACE SHIELDS AT LEAST 8 INCHES LONG WITH GOGGLES, OR

SAFETY GLASSES WITH SIDE SHIELDS. FOR ROUTINE OPERATIONS, ENGINEERING CONTROLS MUST BE USED TO KEEP THE AIRBORNE PCB CONCENTRATION BELOW THE RECOMMENDED TWA. DO NOT WEAR WORK CLOTHING

AWAY FROM PLACE OF EMPLOYMENT. WEAR CLEAN WORK CLOTHING DAILY. INFORM CLEANING ESTABLISHMENTS OF HAZARDS AND PROPER WASTEWATER DISPOSAL PROCEDURES. WASH HANDS AND EXPOSED SKIN BEFORE EATING, DRINKING, SMOKING, OR USING TOILET FACILITIES. FOOD, DRINK, OR SMOKING MATERIALS ARE NOT PERMITTED IN AREAS WHERE PCBs ARE HANDLED, PROCESSED, OR STORED. (CRSOE* 77-225,77/NIOSH) FOR RESPIRATOR SELECTION FOR EMERGENCIES OR FOR NONROUTINE MAINTENANCE OR REPAIR ACTIVITIES AND FOR INSTALLATION AND TESTING OF REQUIRED

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(PRD) Production Sites: FORMERLY MONSANTO, ANNISTON, AL; SAUGET (E. ST. LOUIS), IL; NOT PRODUCED AFTER 1977. MONSANTO LARGEST FORMER PRODUCER.

(ADD) Additive(%): TRANSFORMER-GRADE ASKARELS CONTAIN STABILIZERS SUCH AS GLYCIDYL PHENYL ETHER AND 3,4-EPOXYCYCLOHEXYLMETHYL-3,4-EPOXYCYCLOHEXANE CARBOXYLATE. (CRSOE* 77-225,77/NIOSH)

(BIN) Binary Reactants: PCBS ARE GENERALLY INERT WHEN PLACED IN CONTACT WITH OTHER MATERIALS UNDER NORMAL CONDITIONS OF TEMPERATURE AND PRESSURE. HOWEVER, STRONG SUNLIGHT CONDITIONS MAY CAUSE THE FORMATION OF PHENOLIC MATERIALS AND TRACES OF POLYCHLORINATED DIBENZOFURANS. (EVHPAZ 1,15,72/HUT) (BECTA6 10(6)372,73/CRO)

(LDL) **Detection Limit** (Lab; Techniques,Ref) (ppm): **IN AIR**, POLYCHLORINATED

BIPHENYLS (PCBS) ARE ABSORBED BY FLORISIL IN A TUBE. THEY ARE DESORBED WITH HEXANE AND ANALYZED BY GAS CHROMATOGRAPHY WITH ELECTRON CAPTURE DETECTION. DETECTION LIMIT: 0.01 MG/M3. INTERFERENCES: CONTAMINANTS. NIOSH METHOD 253 (NIOSH*II,1,77/TAY). IN WASTEWATERS AT PH 5 TO 9, POLYCHLORINATED BIPHENYLS (PCBS) ARE EXTRACTED WITH DICHLORAMETHANE, PRECONCENTRATED, AND ANALYZED BY GAS

CHROMATOGRAPHY WITH ELECTRON CAPTURE OR HALOGEN-SPECIFIC DETECTORS. DETECTION LIMIT RANGE: 0.00004 TO 0.00015 MG/L. INTERFERENCES: PHTHALATE ESTERS. EPA METHOD 608. (FEREAC 44FR69510, 12-3-79/EPA) IN

WASTEWATERS OF PH 7 TO 10, POLYCHLORINATED BIPHENYLS (PCBS) ARE

EXTRACTED WITH DICHLORAMETHANE, PRECONCENTRATED, AND ANALYZED BY

PACKED COLUMN GAS CHROMATOGRAPHY INTO A MASS SPECTROMETER. DETECTION LIMIT: 0.1 TO 1.0 MG/L. INTERFERENCES: CONTAMINANTS FROM GLASSWARE AND SOLVENTS. EPA METHOD 625. (FEREAC 44FR60540, 12-3-79/EPA) IN POULTRY FAT, FISH, AND DAIRY PRODUCTS, POLYCHLORINATED BIPHENYLS (PCBS) ARE EXTRACTED FROM HOMOGENIZED SAMPLES WITH CH3CN AND PETROLEUM ETHER OR METHANOL, CH3CN, AND PETROLEUM ETHER FOR FATTY FOODS. THE EXTRACTS ARE FLORISIL CLEANED AND ANALYZED BY GAS CHROMATOGRAPHY WITH ELECTRON CAPTURE DETECTION. DETECTION LIMIT: NOT GIVEN. INTERFERENCES: PHTHALATE ESTERS. AOAC METHOD 29. (ME026* 80/AOAC) IN BLOOD SERUM, POLYCHLORINATED BIPHENYLS (PCBS) ARE EXTRACTED WITH 1:1 ETHYL ETHER AND N-HEXANE. THE EXTRACT IS TREATED WITH 2% METHANOLIC KOH AND SILICA GEL COLUMN CLEANUP. THE CLEANED HEXANE EXTRACT IS CONCENTRATED AND ANALYZED BY GAS CHROMATOGRAPHY USING ELECTRON CAPTURE DETECTION. DETECTION LIMIT: 0.030 MG/L. INTERFERENCES: OTHER PESTICIDE RESIDUES, ESPECIALLY DDT METABOLITES. NIOSH METHOD 329. (NIOSH*II,6,77/TAY) UPDATED 11/84.

(STD) Standard Codes: **SUPERFUND DESIGNATED (HAZARDOUS SUBSTANCES) LIST**. REPORTABLE QUANTITY (RQ): 10 LB.) (STATUTORY SOURCE UNDER CERCLA IS CWA, SECTIONS 311(B)(4) AND 307(A).). FINAL RQ: 10 LB (4.54 KG (CATEGORY A). (FEREAC 50FR13456, 4-4-85) ASSOCIATION OF AMERICAN RAILROADS STCC NUMBER 4961666. (BUXEH* 81/STU) DOT HAZARDOUS MATERIALS TABLE (FEREAC 48FR23551,5-25-83)--UN NO. 2315; **NO LABEL REQUIRED, HAZARD CLASS: ORM-E; STOW ON DECK OR UNDER DECK FOR PASSENGER AND CARGO SHIPS, STOW IN A RECOVERABLE POSITION SEPARATED FROM ALL FOODSTUFFS.** (49CFR* 172.101,6-12-84/DOT) DEPARTMENT OF TRANSPORTATION OPTIONAL HAZARDOUS MATERIALS TABLE (49CFR*

REQUIRED: NONE; PACKAGING GROUP II. VESSEL STOWAGE REQUIREMENTS ON CARGO AND PASSENGER VESSELS, STOW ON DECK OR UNDER DECK. OTHER

REQUIREMENTS: STOW IN A RECOVERABLE POSITION. STOW AWAY FROM FOODSTUFFS. ICAO RECOMMENDATIONS (ICAO** 83/ICAO)--UN CLASS OR DIVISION 9. UPDATED 11/84.

(FLM) Flammability: **FLAMMABLE** (MERCK* 83/WIN)

(TCP) Toxic Combustion Prod.: **PCBS EMIT HIGHLY TOXIC VAPORS WHEN HEATED TO**

DECOMPOSITION INCLUDING CO, HCL, AND CL₂ (HBTND* 83/KIM)
HEXACHLOROBENZENE IS EMITTED BELOW 950 DEGREES CELSIUS. (14CYAT 28,81/CLA) UPDATED 11/84. **1742 °F**

(EXT) Extinguishing Method: BUREAU OF EXPLOSIVES RECOMMENDATIONS--USE EXTINGUISHING AGENT SUITABLE FOR TYPE OF SURROUNDING FIRE SINCE **PCBS DO NOT BURN OR BURN WITH DIFFICULTY.** (BUXEH* 81/STU) ~~EXTINGUISH WITH WATER, FOAM, DRY CHEMICAL, OR CARBON DIOXIDE.~~ (CGHCD* 78/USCG) UPDATED 11/84.

(EXP) Explosiveness: STABLE

(MLT) Melting Point (C.): 28 TO 184

(MTC) Melting Characteristics: MELTING POINTS OF SPECIFIC PCBS RANGE FROM 28.1 TO 28.8 DEGREES CELSIUS FOR 2,2',3'-TRICHLOROBIPHENYL TO 182 TO 184 DEGREES CELSIUS FOR 3,3',4,4'-TETRACHLOROBIPHENYL. (IMEMDT 18,78/IARC)

(SLC) Solubility Characteristics: SOLUBILITY FOR PCB ISOMERS IN WATER IS LOW IN GENERAL, RANGING FROM 0.007 TO 5.9 MG/ML. ALL ARE SOLUBLE IN OILS AND ORGANIC SOLVENTS. (IMEMDT 18,78/IARC) UPDATED 11/84.

(SPG) Specific Gravity: 1.192 TO 1.44 (DPIRDJ 1,81/SAX)

(PER) Persistency: HIGH; HIGHLY CHLORINATED FORMS OF PCBS CONTAINING 5 OR MORE CHLORINE ATOMS PER BIPHENYL MOLECULE ARE MUCH MORE PERSISTENT IN THE ENVIRONMENT THAN PCBS CONTAINING 1, 2, OR 3 CHLORINE ATOMS. TETRACHLOROBIPHENYLS ARE CONSIDERED INTERMEDIATE IN PERSISTENCE. (AWQCD* PBB1-117798,80/ECAD) ENVIRONMENTALLY, APPROXIMATELY ONE CHLORINE ATOM OF EACH CHLORINATED BIPHENYL IS LOST PER YEAR. (39KQAS 56,78/BUN) MICROBIAL AEROBIC DEGRADATION STUDIES USING MIXED

CULTURES IN WATER INDICATED THAT **AROCOR 1242 WAS 98% DEGRADED IN LESS THAN 10 DAYS.** PCB ISOMERS WITH FEWER THAN 4 CHLORINE ATOMS WERE BIODEGRADED, BUT THOSE WITH HIGHER CHLORINE CONTENT ~~WERE NOT~~ **SIGNIFICANTLY DEGRADED. THIS GROUP WOULD INCLUDE AROCOR 1248, 1254, AND 1260.** (LDHW** 169,78/GRI)

(PFA) Potential for Accumulation: HIGH IN LIVER AND FATTY TISSUES. FRESHWATER RESIDUE DATA SHOW THAT PCBS ACCUMULATE TO RELATIVELY HIGH LEVELS IN INVERTEBRATE TISSUES AND THAT FOR MOST SPECIES PCBS ARE NOT RAPIDLY DEPLETED WHEN EXPOSURE IS DISCONTINUED. BIOCONCENTRATION FACTORS FOR INVERTEBRATE SPECIES RANGE FROM 2700 TO 108,000. BIOCONCENTRATION FACTORS FOR PCB EXPOSURES OF FISH SPECIES RANGE FROM 3000 TO 274,000. (AWQCD* PBB1-117798,80/ECAD)

(FOO) Food Chain Contamination Potential: PCBS DISPLAY THE SAME ACCUMULATIVE CHARACTERISTICS AS DDT AND OTHER CHLORINATED PESTICIDES. BIOACCUMULATION AND OR BIOMAGNIFICATION OF PCBS IN THE LAKE ONTARIO ECOSYSTEM HAS BEEN SHOWN TO OCCUR VIA WATER, SEDIMENTS,

PLANKTON, CATFISH, HERRING GULL AND EGGS, AND HUMANS AND HUMAN MILK. (TEHEDH 4,81,80/SAF)

(EDF) **Etiological Potential:** PCB EXPOSURES MAY INITIATE OR AGGRAVATE SKIN,

LIVER, LUNG, AND NERVOUS DISEASES. ACUTE EXPOSURE MAY INITIATE CHLORACNE AND EYE IRRITATION, DERMATOLOGICAL SIGNS ASSOCIATED WITH FOLLICULAR KERATOSIS, AND VARIOUS NERVOUS SYMPTOMS. OCCUPATIONAL EXPOSURES HAVE BEEN RELATED TO CHLORACNE, JAUNDICE, AND ACUTE

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STANDARD OF 1 .MU.G/M3 WAS DESIGNED TO REDUCE THE RISK OF DEVELOPMENT OF CARCINOGENIC, ADVERSE REPRODUCTIVE, HEPATOTOXIC, AND DERMATOLOGIC EFFECTS. (CRSOE* 77-225,77/NIOSH) UPDATED 11/84.

(CAG) **Carcinogenicity:** IN 1979, PCBS WERE CLASSIFIED AS "PROBABLE CARCINOGENIC FOR HUMANS" BY A WORKING GROUP OF THE INTERNATIONAL AGENCY FOR RESEARCH ON CANCER (IARC), AN AGENCY OF THE WORLD HEALTH ORGANIZATION (WHO). (IMEMDT 1-20,1,79/IARC) IN JAPAN, 9 OF 22 DEATHS (OR 41%) WERE DUE TO MALIGNANT NEOPLASMS (TUMORS IN STOMACH, LIVER, LUNGS, AND BREAST) AFTER PROLONGED EXPOSURE TO PCBS. (IMEMDT 18,78/IARC) TWO RETROSPECTIVE MORTALITY STUDIES OF A COHORT OF WORKERS OCCUPATIONALLY EXPOSED TO THESE CHEMICALS HAVE BEEN CONDUCTED. IN THE U.S., TWO MALIGNANT TUMORS AND FOUR OTHER CANCERS WERE DIAGNOSED IN 31 WORKERS (OR 19%) HEAVILY EXPOSED TO PCBS. FORTY-ONE PERCENT WERE DUE TO MALIGNANT NEOPLASMS (TUMOR IN STOMACH, LIVER, LUNGS, AND BREAST) AFTER PROLONGED EXPOSURE TO PCBS. (IMEMDT 18,78/IARC) THE NATIONAL INSTITUTE FOR OCCUPATIONAL SAFETY AND HEALTH STUDIED 2,500 PCB-EXPOSED ELECTRICAL EQUIPMENT WORKERS, OVER 50% EXPOSED > 20 YEARS, AND FOUND NO SIGNIFICANT INCREASE IN CANCER, CARDIOVASCULAR DISEASE, OR NEUROLOGICAL MANIFESTATIONS. (PECODC 16,240,83/HAM) PCBS HAVE BEEN REPORTED TO CAUSE LIVER CANCER IN ANIMALS. SEE INDIVIDUAL AROCLOR PROFILES FOR MORE INFORMATION. UPDATED 11/84.

(MUT) **Mutagenicity:** AROCLOR 1221 CAUSES MUTAGENIC EFFECTS IN SALMONELLA TYPHIMURIUM. AROCLORS 1242 AND 1268 HAVE NOT CAUSED MUTAGENIC EFFECTS. (RCOCB* 15,653,76/WYN) (IMEMDT 18,78/IARC) RTECS ONLINE CITES REPORTS OF POSITIVE MUTAGENIC EFFECTS BY AROCLORS 1254 AND 1260 AND KANECHLOR 400. UPDATED 11/84.

(TER) **Teratogenicity:** TERATOGENIC EFFECTS WERE PRODUCED IN RHESUS MONKEYS FED PCBS (AROCOR 1248). INFANTS BORN TO WOMEN SUFFERING FROM YUSHO DISEASE (EXPOSURE TO PCBS IN CONTAMINATED OIL) HAD ABNORMAL PIGMENTATION, OCULAR DISCHARGE, HYPERKERATOSIS, AND OTHER SKIN ABNORMALITIES AND WERE SMALLER THAN AVERAGE. (IMEMDT 18,78/IARC) IN JAPAN, SEVERAL TERATOGENIC EFFECTS IN OFFSPRING OF PATIENTS SUFFERING FROM YUSHO DISEASE WERE NOTED, INCLUDING SKULL DEFORMATIONS, INCREASED MELANIN PIGMENTS, SMALL SIZE FOR AGE, AND STILLBORN INFANTS. (PDTNBH 6(1)20,77/YAM)

(CAR) Chronic Aquatic Toxicity Limit (Reference): PCB CRITERION TO PROTECT

AQUATIC LIFE IS .014 .MU.G/L (PARTS PER BILLION) AS A 24-HOUR AVERAGE. (AWQCD* PBB1-117798,80/ECAO)

(ATB) Animal Toxicity Text:

Value	Time	Species	Param.	Route	Ref.
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[THESE SUBSTANCES ARE OF A LOW ORDER OF ACUTE TOXICITY. ALTHOUGH THE ORAL TOXICITY INTAKE DECREASES WITH INCREASED CHLORINATION, THIS TREND WAS NOT NOTED IN RABBITS. (14CYAT 2B,81/CLA)] UPDATED 11/84.

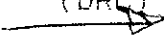
(WAN) Acute Waterfowl Toxicity (ppm): (>>) 2000 (MG/KG BW)

(WAR) Acute Waterfowl Toxicity (Reference): THE ORAL LD50'S OF FOUR AROCLORS (1242, 1254, 1260, AND 1268) FOR 8- TO 9-MONTH-OLD MALLARD DUCKS WERE ALL MUCH GREATER THAN 2,000 MG/KG BW. (HTPW** PUB153,84/HUD)

(CWR) Chronic Waterfowl Toxicity Limit (Reference): PCBS CAUSE THIN EGGS. (ESTHAG 0005) REDUCES REPRODUCTIVE POTENTIAL. (NRCC** 16077,78/ROB)

(ADN) Aquatic Plants (ppm): 0.0001 TO 0.1

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- (AQR) Aquatic Plants (Reference): PCBS REDUCED GROWTH IN MARINE AND FRESHWATER PHYTOPLANKTON AT LEVELS OF 0.1 TO 100 .MU.G/L (0.0001 TO 0.1 PPM) (NRCC** 16077,78/ROB) UPDATED 11/84.
- (TRT) Major Species Threatened: BIRDS (EGG PRODUCTION), AQUATIC LIFE, AND PREDATORS.
- (INH) Inhalation Limit (Value): 5; 10 (5 MG/M3 IS THE IDLH FOR PCBS WITH 54% CHLORINE; 10 MG/M3 IS THE IDLH FOR PCBS WITH 42% CHLORINE.)
- (INT) ~~Inhalation Limit~~ (Text): REGULATIONS--
 OSHA PEL\0.1 MG/M3 (54% CHLORINE)\(29CFR* 1910)
 OSHA PEL\1 MG/M3 (42% CHLORINE)\(29CFR* 1910)
 RECOMMENDATIONS--
 NIOSH TWA\0.001 MG/M3\((CRSOE* 77-225,77/NIOSH)
 NIOSH IDLH\5 MG/M3 (54% CHLORINE)\PKTGD* 80/MAC
 NIOSH IDLH\10 MG/M3 (42% CHLORINE)\PKTGD* 80/MAC
 ACGIH TLV (TWA) (SKIN)\0.5 MG/M3 (54% CHLORINE)\(TLVADM 84/ACGIH)
 ACGIH TLV (TWA) (SKIN)\1 MG/M3 (42% CHLORINE)\(TLVADM 84/ACGIH)
 ACGIH STEL (SKIN)\1 MG/M3/15 MIN (54% CHLORINE)\(TLVADM 84/ACGIH)
 ACGIH STEL (SKIN)\2 MG/M3/15 MIN (42% CHLORINE)\(TLVADM 84/ACGIH).
 UPDATED 11/84.
- (IRL) ~~Irritation Levels~~ (Value): 0.013 TO 0.264 (MG/M3 AIR)
- (IRT) Irritation Levels (Text): WORKERS COMPLAIN OF THROAT AND EYE IRRITATION WHEN EXPOSED TO CONCENTRATIONS BETWEEN 0.013 TO 0.264 MG/M3. UNBEARABLE IRRITATION OCCURRED AT 10 MG/M3. (CRSOE* 77-225,77/NIOSH)
- (DRC)  Direct Contact: PCBS ARE READILY ABSORBED THROUGH THE SKIN. (NRCC** 16077,78/ROB) LIQUID OR SOLID PCBS ARE IRRITATING TO SKIN AND EYES.
- VAPORS CAUSE SEVERE IRRITATION OF EYES AND THROAT AND CAN CAUSE EYE AND LUNG INJURY. (CGHCD* 78/USCG) UPDATED 11/84.
- (JNS) ~~General Sensation~~: PCBS HAVE A WEAK ODOR OR ARE PRACTICALLY ODORLESS. (CGHCD* 78/USCG) SIGNS AND SYMPTOMS REPORTED FROM INGESTION OF PCBS IN OIL IN JAPAN: ACUTE EXPOSURE SYMPTOMS: INCREASED EYE DISCHARGE AND SWELLING OF UPPER EYELIDS, ACNEFORM ERUPTIONS, AND FOLLICULAR ACCENTUATIONS, BRONCHITIS, PIGMENTATION OF THE SKIN, SWELLING, JAUNDICE, NUMBNESS OF LIMBS, SPASMS, HEARING AND VISION PROBLEMS, AND GASTROINTESTINAL DISTURBANCES. ACUTE EXPOSURE SIGNS: DECREASE IN ERYTHROCYTE COUNT, INCREASE IN LEUKOCYTE COUNT AND SERUM LIPIDS, PARTICULARLY TRIGLYCERIDES, LIVER DAMAGE, AND ADRENOCORTICAL AND OVARIAN DYSFUNCTION. ~~THE HIGHER THE CHLORINE CONTENT, THE MORE TOXIC. OXIDES ARE STILL MORE TOXIC.~~ CHRONIC EXPOSURE SYMPTOMS: PERSISTENT HEADACHES, GENERAL FATIGUE, WEAKNESS AND NUMBNESS OF LIMBS, AND WEIGHT LOSS. (AWQCD* PB81-117798,80/ECAO) (IMEMDT 18,78/IARC) SIGNS AND SYMPTOMS REPORTED FROM OCCUPATIONAL EXPOSURE TO PCBS, MOSTLY INHALATION AND DERMAL CONTACT. ACUTE EXPOSURE SYMPTOMS: DRY SORE THROAT, SKIN RASH, GASTROINTESTINAL DISTURBANCE, EYE IRRITATION, HEADACHES. ACUTE EXPOSURE SIGNS: CHANGES IN FAT METABOLISM, MILD DISTURBANCES IN LIVER FUNCTION, CHROMODERMATOSIS OF FINGER JOINTS AND NAIL BEDS, ACNEFORM EXANTHEMA. CHRONIC EXPOSURE SYMPTOMS: CHLORACNE (AWQCD* PB81-117798,80/ECAO) UPDATED 11/84.
- (DHI) Direct Human Ingestion (Mg./KGwt.): 7
- (DHR) Direct Human Ingestion (Reference): A MINIMUM TOTAL ORAL INTAKE OF 500 MG PCB MAY CAUSE POISONING SIGNS AND SYMPTOMS. (14CYAT 2B,81/CLA) FOR A 70-KG ADULT MALE, THIS IS EQUIVALENT TO 7 MG/KG. UPDATED 11/84.

(DRR) **Recommended Drinking Water Limits** (Reference): DUE TO THE POTENTIAL CARCINOGENIC EFFECT, THE CONCENTRATION OF PCBS SHOULD BE ZERO BASED ON THE NON-THRESHOLD ASSUMPTION. ~~SINCE THIS LEVEL MAY NOT BE~~ ATTAINABLE, LEVELS WHICH RAISE THE HUMAN LIFETIME CANCER RISK $1E-5$, $1E-6$, AND $1E-7$ ARE ALLOWED. THESE LEVELS ARE .79 PPT, .079 PPT, AND .0079 PPT, RESPECTIVELY. (AWQCD* PB81-117798,80/ECAO) UPDATED 11/84.

(SAF) **Personal Safety Precautions*** FOR PROTECTIVE CLOTHING AND EYE PROTECTION, SEE FIELD HND. NIOSH RESPIRATOR SELECTION GUIDE: FOR CONCENTRATIONS GREATER THAN 1.0 $\mu\text{G}/\text{M}^3$ FOR EMERGENCY SITUATIONS, USE EITHER (1) A SELF-CONTAINED BREATHING APPARATUS WITH A FULL FACEPIECE OPERATED IN PRESSURE-DEMAND OR OTHER POSITIVE PRESSURE MODE OR (2) A COMBINATION TYPE C SUPPLIED-AIR RESPIRATOR WITH FULL FACEPIECE OPERATED IN PRESSURE-DEMAND OR OTHER POSITIVE PRESSURE MODE AND AN AUXILIARY SELF-CONTAINED BREATHING APPARATUS OPERATED IN PRESSURE DEMAND OR OTHER POSITIVE PRESSURE MODE. (CRSOE* 77-225,77/NIOSH) UPDATED 11/84.

(AHL) **Acute Hazard Level:** PCBS ARE ~~MODERATELY TOXIC~~ TO HUMANS THROUGH ORAL, DERMAL, AND INHALATION ROUTES BASED ON INFORMATION IN FIELDS INT AND INS. LOWEST TOXIC ORAL DOSE FOR HUMANS REPORTED TO BE 7 MG/KG IN FIELD DHI.

(CHL) **Chronic Hazard Level:** PCBS ARE STRONG CHRONIC IRRITANTS. TOXIC. SKIN

ABSORPTION POTENTIAL. LIVER AND SKIN DISORDERS IN HUMANS. REPRODUCTION ABNORMALITIES IN HUMANS AND MAMMALS. IN BIRDS, CAUSES THIN EGG SHELLS. PROBABLE HUMAN CARCINOGEN AS REPORTED IN FIELD CAG.

(HEL) **Degree of Hazard to Public Health*** WHILE ACUTE TOXICITY OF PCBS IS REPORTED LOW, TYPICAL CONTAMINANTS IN PCBS ARE SOME OF THE MORE TOXIC MATERIALS KNOWN TO MAN. CONSIDERED STRONG IRRITANT. HIGHLY TOXIC WHEN INHALED OR INGESTED. CHRONICALLY TOXIC WITH INHALATION OR

SKIN ABSORPTION. RAPIDLY ACCUMULATES IN FOOD CHAIN. SOME OF THE HAZARDS OF THE PCBS CAN BE ATTRIBUTED TO POLYCHLORODIBENZOFURAN CONTAMINANTS. (BECTA6 10(6)372,73/CRO) (AWQCD* PB81-117798,80/ECAO)

(AIR) Air Pollution: TOXIC. PCBS VOLATILIZE SLOWLY FROM BODIES OF WATER.
(ACT) Action Levels: NOTIFY AIR AUTHORITY. RESTRICT ACCESS TO AFFECTED WATERS OR LAND SPILL AREAS. EVACUATE AREA IF NEAR HOMES. BUREAU OF EXPLOSIVES RECOMMENDATIONS--AVOID CONTACT WITH SPILLED MATERIALS. KEEP UPWIND TO AVOID BREATHING VAPORS OR DUST. FOR A LAND SPILL, BUILD DIKES TO CONTAIN FLOW AND KEEP MATERIAL OUT OF WATER SOURCES AND SEWERS. SUITABLE DIKE MATERIALS INCLUDE SOIL, SAND BAGS, FOAMED POLYURETHANE, OR FOAMED CONCRETE. OR ABSORB SPILLED LIQUID WITH FLY ASH OR CEMENT POWDER. (BUXEH* 81/STU) UPDATED 11/84.

(AML) In Situ Amelioration: SEEK ENVIRONMENTAL ENGINEERING ASSISTANCE THROUGH EPA'S ENVIRONMENTAL RESPONSE TEAM (ERT), EDISON, NJ, 24-HOUR

PHONE NO. 201-321-6660. SINGLE-STAGE CONTACTOR DOSE OF POWDERED CARBON REQUIRED TO REDUCE THE INITIAL CONCENTRATION (C.F.) MRI RECOMMENDATIONS 12/84--SEEK PROFESSIONAL HELP TO EVALUATE PROBLEM AND IMPLEMENT CONTAINMENT PROCEDURES. ABSORB SPILLED MATERIAL WITH VERMICULITE, FULLER'S EARTH, PEAT MOSS, SAND, BENTONITE, OIL SPILL ABSORBANT PADS, OR OTHER COMMERCIAL ABSORBENTS. REMOVE CONTAMINATED SOIL. CONTAMINATED SOIL OR ABSORBENT MAY BE PACKAGED FOR DISPOSAL FOR SMALL SPILLS, WASH IMPERVIOUS SURFACES WITH SOAP AND WATER AFTER USE OF ABSORBENTS. COLLECT WASH WATER FOR DISPOSAL. CONFIRM ALL TREATMENT PROCEDURES WITH RESPONSIBLE ENVIRONMENTAL ENGINEER

003033

PCBS SPILLED IN WATER--TRAP MATERIAL AT BOTTOM UTILIZING NATURAL DEEP WATER POCKETS, EXCAVATED LAGOONS, OR SAND BAG BARRIERS. APPLY ACTIVATED CARBON AT TEN TIMES THE AMOUNT OF SPILLED PCBS IN AREAS WHERE CONCENTRATION IS OVER 10 PPM. REMOVED TRAPPED MATERIAL ON BOTTOM WITH SUCTION HOSES OR MECHANICAL DREDGES AND LIFTS.
(BUXEH* 81/STU)

- (SHR) Beach/Shore Restoration: ABSORB SPILLED PORTIONS WITH CARBON OR PEAT. DO NOT BURN. REMOVE CONTAMINATED SOIL.
- (AVL) ~~Aval. of Countermeasure Material:~~ PUMPS - FIRE DEPARTMENT; VACUUM SWIMMING POOL SUPPLIERS; CARBON - WATER TREATMENT PLANTS, SUGAR REFINERIES; PEAT - NURSERIES, FLORAL SHOPS.
- (DIS) ~~Disposal Method:~~ CAPACITORS (SMALL AND LARGE); PROPERLY DRAINED TRANSFORMERS; ~~CONTAMINATED SOILS, SLUDGES, AND OTHER DEBRIS,~~ DREDGE SPOILS; MUNICIPAL SLUDGES; ~~AND PROPERLY DRAINED CONTAINERS (DRUMS.) MAY BE SENT TO EPA-APPROVED CHEMICAL WASTE LANDFILL SITES FOR BURIAL. LIQUID PCB WASTE MUST BE STORED AND SENT TO~~ INCINERATION OR HIGH TEMPERATURE BOILER FACILITIES APPROVED BY EPA. USE OF SELECTED NON-THERMAL METHODS ARE PERMITTED FOR TREATMENT OF TRANSFORMER OIL CONTAINING NOT MORE THAN 1000 PPM AROCLOR. CONFIRM DISPOSAL PROCEDURES WITH RESPONSIBLE ENVIRONMENTAL ENGINEER AND REGULATORY OFFICIALS. (PCB*** 81/SAV)
- (DSN) ~~Disposal Notification:~~ CONTACT EPA REGIONAL OFFICES FOR LOCATION OF EPA APPROVED CHEMICAL WASTE LANDFILLS AND INCINERATION FACILITIES.
- (WTP) Effects on Water Treatment Process: PCBS WITH FEWER THAN 5 CHLORINES WERE DEGRADED BY ACCLIMATED SLUDGE MICROORGANISMS; 100% OF BIPHENYLS DEGRADED IN 48 HOURS, 15% OF 4 CHLORINE COMPOUNDS. ANOTHER STUDY FOUND DEGRADATION SHARPLY REDUCED IF SLUDGE SOLIDS WERE PRESENT. (ETPCB* PB84142579,83/LEI) UPDATED 11/84
- (WAT) Major Water Use Threatened: FISHERIES, POTABLE SUPPLY, RECREATION.
- (LOC) Probable Location and State of Material: LIQUID, WAXY SOLIDS, OR RESINS. WILL SINK TO BOTTOM OF STREAMS OR PONDS AND DISSOLVE ONLY SLIGHTLY.
- (DRT) Soil Chemistry: ALL PCBS ADSORB STRONGLY ON SOILS. PCB DECOMPOSITION IN SOILS DEPENDS ON LEVEL OF CHLORINATION. PCBS WITH FEWER THAN 5 CHLORINES HAVE A HALF-LIFE OF 30 DAYS OR LESS; THOSE WITH OVER 5 CHLORINES HAVE HALF-LIVES GREATER THAN 1 YEAR. (ETPCB* PB84142579,83/LEI) UPDATED 11/84.
- (HOH) Water Chemistry: HYDROLYSIS--PCBS ARE INERT AND STABLE TO CONDITIONS OF HYDROLYSIS. (IMEMDT 18,78/IARC) HYDROLYSIS NOT LIKELY TO OCCUR EVEN UNDER SEVERE ACIDIC AND BASIC CONDITIONS. (ETPCB* PB84142579,83/LEI) VOLATILIZES FROM WATER WITHOUT SEDIMENTS, HALF-LIVES OF 10 TO 12 HOURS REPORTED. ADSORPTION PREVENTS LOSS THROUGH VOLATILIZATION IF SEDIMENT IS PRESENT. (ETPCB* PB84142579,83/LEI) UPDATED 11/84.
- (COL) Color in Water: COLORLESS
- (DAT) Adequacy of Data: GOOD

SOAP POWDERS**Hazard Analysis****Toxic Hazard Rating:**

Acute Local: Irritant 1; Allergen 1.
Acute Systemic: Irritant 1; Allergen 1; Ingestion 1.
Chronic Local: Irritant 1; Allergen 1.
Chronic Systemic: U.

Fire Hazard: Slight, by chemical reaction (Section 7).

Spontaneous Heating: Moderate.

Countermeasures

Ventilation Control: Section 2.

Storage and Handling: Section 7.

SOAPSTONE DUST. See talc.

SOCIUCUSIS. See Section 3.

SODA CHLORATE. See sodium chlorate.

SODA LIME**General Information**

Sodium hydroxide with lime. A mixture of calcium oxide with 5-20% sodium hydroxide and containing 6-18% water. White or gray granules.

Hazard Analysis**Toxic Hazard Rating:**

Acute Local: Irritant 3.
Acute Systemic: Ingestion 3; Inhalation 3.
Chronic Local: Irritant 2.
Chronic Systemic: U.

Countermeasures

Storage and Handling: Section 7.

Shipping Regulations: Section 11.

Regulated by IATA.

SODAMIDE. See sodium amide.

SODA MONOHYDRATE. See sodium carbonate.

SODA NITER. See sodium nitrate.

General Information

Synonym: natrium.

Light, soft, ductile, malleable, silver-white metal.

Formula: Na.

At wt: 23.0, mp: 97.81°C, bp: 892°C, d: 0.9710 at 20°C, autoign. temp.: above 115°C in dry air, vap. press.: 1.2 mm at 400°C.

Hazard Analysis**Toxic Hazard Rating:**

Acute Local: (Metallic Na): Irritant 3.
Inhalation 3. (Na Smoke): Irritant 2; Ingestion 3.
Acute Systemic: U.
Chronic Local: (Metallic Na): Irritant 1. (Na Smoke): Irritant 2.
Chronic Systemic: U.

Caution: Metallic sodium reacts exothermally with the moisture of body or tissue surfaces, causing thermal and chemical burns due to the reaction with sodium and the sodium hydroxide formed.

Radiation Hazard: For permissible levels see Section 5, Table 5. Artificial isotope ^{24}Na , $T_{1/2} = 2.6\text{y}$. Decays to stable ^{24}Ne by β^- and positron emission (90%) of 0.54 MeV. Also via γ 's of 1.27 MeV and X-rays. Artificial isotope ^{22}Na , $T_{1/2} = 15\text{h}$. Decays to stable ^{22}Mg via β^+ 's of 1.39 MeV. Also via γ 's of 1.37, 2.75 MeV.

Fire Hazard: Dangerous, when exposed to heat or

flame, or by chemical reaction with moisture, air, or any oxidizing material; decomposes moisture to evolve hydrogen and heat; reacts exothermally with the halogens, acids and halogenated hydrocarbons. Heated sodium is spontaneously flammable in air. Can be safely stored under liquid hydrocarbons.

Spontaneous Heating: No.

Explosion Hazard: Dangerous, when exposed to moisture in any form! Keep dry at all times!

Disaster Hazard: Dangerous, when heated in air, it emits toxic fumes of sodium oxide; will react with water or steam to produce heat, hydrogen, and flammable vapors; can react vigorously to explosively with oxidizing materials. See hydrogen.

Countermeasures

Ventilation Control: Section 2.

To Fight Fire: Soda ash, dry sodium chloride, or graphite in order of preference (Section 7).

Storage and Handling (Section 7): In the absence of moisture, oxygen or halides, sodium is safe to handle. As to indoor storage of drums, the important thing in storing sodium is that the storage area must be kept dry, since explosions may result from the contact of sodium with water. No automatic sprinkler system, or water or steam pipes containing water should be allowed in the room. Sufficient heat should be provided (without the use of open flames) to prevent condensation of moisture in the room due to changes in atmospheric conditions. Empty sodium drums should be stored in this same area.

"Fire extinguishers (preferably color-coded) must be provided in the storage area, but only those containing sodium chloride, sodium carbonate, or graphite may be used. Pails are adequate for storing extinguishant if special care is taken to insure that the materials are dry. Water, carbon dioxide, carbon tetrachloride, soda-acid, or conventional dry chemical (bicarbonate) extinguishers must be avoided, and signs should be posted in the storage area warning against their use.

"Only that amount of sodium immediately needed should be removed from the storage area. Sodium should not be withdrawn for intermediate storage in reaction areas. A special metal container with a tight fitting cover should be used for transporting sodium bricks to other plant areas, once they have been removed from the original container.

Large-scale outdoor storage tanks such as tank cars are unloaded after melting the sodium by circulating hot oil and withdrawing the molten sodium by vacuum to storage tanks similar in construction to sodium tank cars. Although steam may be used to heat the circulating oil, for use on both tank cars and storage tanks, steam must not be used directly as the heating agent for sodium tanks."

Personnel Protection: Section 2.

Shipping Regulations: Section 11.

Regulated by CG, DOT, IATA.

SODIUM ACETATE**General Information**

White crystals, sol. in water.

TOXIC HAZARD RATING CODE (For detailed discussion, see Section 9.)

0 NONE: (a) No harm under any conditions; (b) Harmful only under unusual conditions or overwhelming dosage.

1 SLIGHT: Causes readily reversible changes which disappear after end of exposure.

2 MODERATE: May involve both irreversible and revers-

ible changes not severe enough to cause death or permanent injury.

3 HIGH: May cause death or permanent injury after very short exposure to small quantities.

U UNKNOWN: No information on humans considered valid by authors.

060011

posits in Utah, California; the largest producing district is in Green River,

de, sodium sulfate, calcium magnesium carbonate, soda

58%, extra light, natural

chemicals, pulp and paper compounds, soaps and detergents, aluminum production, cleaning preparations, filling ponds from leakage of clay particles, which swell in coal liquefaction.

in bicarbonate.

ash.

in hydroxide.

in carbonate monohydrate.

8-8. A mixture of calcium hydroxide or potassium hydroxide and the absorption of carbon vapor. Yellowish-white granules unless finely divided. Must be kept

gent. Usually percentage of water is stated. Irritation and inhalation, strong

carbon dioxide absorbent,

glass.

solite.

in amide.

tral soda). A combination of soda in definite proportions where an alkali is causticity between bicarbonate and soda ash. White, crystalline and possessing valuable cleaning properties. Prepared in

rs, laundering, wool scouring agents, textile cleaners, mild

See sodium carbonate,

soda, natural. See soda ash.

soda niter. See sodium nitrate.

"Sodaphos."TM for glassy sodium tetraphosphate.

soda pulp. See pulp, paper.

soda, washing. See sal soda.

α -sodio-sodium acetate. (sodium α -sodioacetate). $\text{NaCH}_2\text{COONa}$.

Properties: Free-flowing powder, stable in dry air, decomposes slowly in moist air, decomposes at 280°C without melting, insoluble in ethers and hydrocarbons, reacts mildly with water.

Grade: 80-85% pure. Impurities are sodium acetate, sodium amide, and sodium hydroxide.

Hazard: Toxic by inhalation, irritant to skin and mucous membranes.

Use: Organic intermediate, drying agent for organic solvents.

Soddy, Frederick (1877-1965) A British physicist who won Nobel prize in chemistry in 1921. Work was concerned with radioactive elements and atomic energy. His concept of isotopes and displacement law of radioactive change is basic to nuclear physics. His education was at Oxford and Glasgow. He later worked in Canada and Australia.

(sodium). CAS: 7440-23-5. Na. Metallic element, atomic number 11, group IA of Periodic Table, ΔH_f 22.98977, valence = 1, no stable isotopes but several radioactive forms, extremely reactive.

Properties: Soft, silver-white solid oxidizing rapidly in air; wax-like at room temperature, brittle at low temperatures. Store in air-tight containers or in naphtha or similar liquid that does not contain water or free oxygen. D 0.9674 (25°C), mp 97.6°C, bp 892°C. Decomposes water on contact, with evolution of hydrogen to form sodium hydroxide; insoluble in benzene, kerosene, and naphtha. Has excellent electrical conductivity and high heat-absorbing capacity.

Derivation: Electrolysis of a fused mixture of sodium chloride and calcium chloride.

Method of purification: Distillation. Grade: Commercial, technical, brick, amalgam, coated powders, dispersions (sodium dispersion), reactor (99.99% pure).

Hazard: Severe fire risk in contact with water in any form, ignites spontaneously in dry air when heated; to extinguish fires use dry soda ash, salt, or lime. Forms strong caustic irritant to tissue. Use: Tetraethyl and tetramethyl lead, titanium re-

duction, dium peroxide, sodium hydride, polymerization catalyst for synthetic rubber, lab reagent, coolant in nuclear reactors, electric power cable (encased in polyethylene), non-glare lighting for highways, radioactive forms in tracer studies and medicine, heat transfer agent in solar-powered electric generators. See sodium dispersions.

sodium abietate. (rosin soap; sodium resinate). $\text{C}_{19}\text{H}_{29}\text{COONa}$.

Properties: White powder, soluble in water. Combustible.

Derivation: By leaching rosin with sodium hydroxide solution.

Use: Soap making, paper coating.

sodium acetate. CAS: 127-09-3.

(a) $\text{NaC}_2\text{H}_3\text{O}_2$, (b) $\text{NaC}_2\text{H}_3\text{O}_2 \cdot 3\text{H}_2\text{O}$.

Properties: Colorless, odorless crystals; efflorescent; soluble in water; slightly soluble in alcohol; soluble in ether. (a) D 1.528, mp 324°C; (b) d 1.45, mp 58°C; autoignition temperature 1125°F (607°C). Combustible.

Grade: Highest purity, pure fused, CP, NF, technical, FCC.

Use: Dye and color intermediate, pharmaceuticals, cinnamic acid, soaps, photography, purification of glucose, meat preservation, medicine, electrophoresis, tanning, dehydrating agent, buffer, lab reagent, food additive.

sodium acetone bisulfate. (acetone-sodium bisulfite). $(\text{CH}_3)_2\text{CONaHSO}_3$.

Properties: Crystalline material, soluble in water, decomposed by acids, slightly soluble in alcohol. Combustible.

Derivation: Interaction of sodium bisulfite and acetone.

Use: Chemical (pure acetone), photography, textile (dyeing and printing).

sodium acetylformate. See sodium pyruvate.

sodium acid carbonate. See sodium bicarbonate.

sodium acid methanearsonate. See sodium methanearsonate.

sodium acid phosphate. See sodium phosphate, monobasic.

sodium acid pyrophosphate. See sodium pyrophosphate, acid.

sodium acid sulfate. See sodium bisulfate.

sodium acid sulfite. See sodium bisulfite.

sodium acid tartrate. See sodium bitartrate.

sodium alginate.

CAS: 900

Properties:

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forms. In

water; in

form. Co

Derivation:

gic acid

Grade: NF

Use: Thick

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Use: Biode

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NaAlH_4 .

Properties

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(CAS) CAS Registry Number: 7440-23-5
 (MAT) Material Name: ~~\$\$\$~~ \$\$\$
 (SYN) Synonyms: NATRIUM
 (FML) Chemical Formula: NA
 (SPC) Species in Mixture: 99.9% PURE
 (USS) Common Uses: MANUFACTURE SODIUM SALTS; MANUFACTURE TETRAETHYL LEAD; PHOTOELECTRIC CELLS; SODIUM LAMPS
 (RAL) Transport, Rail (%): 73.1
 (BRG) Transport, Barge(%): 2.3
 (TRK) Transport, Truck (%): 24.6
 (CON) Containers: ~~HERMETICALLY~~ SEALED STEEL DRUMS, TIN CANS, AND TANK CARS.
 (STO) General Storage Procedure: DO NOT TIER IF IT CAN BE AVOIDED. KEEP AWAY FROM WATER, AVOIDING SPRINKLER SYSTEMS. SAFEGUARD AGAINST MECHANICAL INJURY OF CONTAINERS. KEEP UNDER LIQUIDS CONTAINING NO OXYGEN, SUCH AS KEROSENE, NAPHTHA. A ~~DETACHED FIRE-RESISTIVE BUILDING IS~~ RECOMMENDED FOR QUANTITY STORAGE.
 (HND) General Handling Procedure: SHIPPED IN ~~HERMETICALLY~~ SEALED STEEL DRUMS, TIN CANS AND TANK CARS.
 (PRD) ~~Production Sites:~~ E.I. DU PONT DE NEMOURS AND CO., INC., NIAGARA FALLS, NY; MEMPHIS, TN; ETHYL CORP., BATON ROUGE, LA; HOUSTON, TX; NATIONAL DISTILLERS AND CHEMICAL CORP., ASHTABULA, OH.
 (BIN) **Binary Reactants:** ~~AIR~~, BISMUTH TRIOXIDE, BROMINE, BROMOAZIDE, CARBON DIOXIDE, CARBON TETRACHLORIDE, **CHLORINATED HYDROCARBONS**, CHLORINE, CHLOROFORM, CHROMIUM TRIOXIDE, CUPRIC OXIDE, 1,2-DICHLOROETHYLENE, DICHLOROMETHANE, FLUORINE, HYDRAZINE HYDRATE, HYDROCHLORIC ACID, HYDROFLUORIC ACID, HYDROXYLAMINE, IODINE MONOCHLORIDE, IODINE PENTAFLUORIDE, LEAD OXIDE, MERCUROUS OXIDE, METHYL CHLORIDE, MOLYBDENUM TRIOXIDE, NITRIC ACID, PHOSPHOROUS PENTACHLORIDE, PHOSPHOROUS PENTOXIDE, PHOSPHOROUS TRIBROMIDE, PHOSPHOROUS TRICHLORIDE, SELENIUM, SILVER BROMIDE, SILVER CHLORIDE, SILVER FLUORIDE, SILVER IODIDE, STANNIC OXIDE, SULFUR, SULFUR DIOXIDE, SULFURIC ACID, TETRACHLOROETHANE, THIOPHOSPHORYL FLUORIDE, ~~WATER~~
 (COR) Corrosiveness: ACTS AS CAUSTIC IN WATER.
 (SGM) **Synergistic Materials:** ~~AMMONIUM~~ AMMONIUM, CALCIUM, AND MAGNESIUM IONS CAN BE SYNERGISTIC TO SODIUM IONS NEAR TOXIC LEVELS.
 (ANT) **Antagonistic Materials:** POTASSIUM ION IS ANTAGONISTIC TO SODIUM ION.
 (FDL) Detection Limit (Field; Techniques,Ref) (ppm): .2, PH, (BNW 90* 0001)
 (LDL) Detection Limit (Lab; Techniques,Ref) (ppm): .1, **SODIUM-FLAME PHOTOMETRY**, (BNW10* 0016)
 (STD) Standard Codes: EPA 311; NFPA - 1,0,2; **SUPERFUND DESIGNATED (HAZARDOUS SUBSTANCES) LIST**.
 (FLM) Flammability: **NONFLAMMABLE**. COMBUSTION REQUIRES PREHEATING MODERATE HAZARD.
 (TCP) Toxic Combustion Prod.: **SLIGHT HAZARD** - WEAR CANISTER-TYPE MASK.

000013

(EXT) Extinguishing Method: SMOTHER WITH AN EXCESS OF DRY GRAPHITE OR DRY SAND. DO NOT USE WATER. IT IS DIFFICULT TO EXTINGUISH FIRES IN LARGE QUANTITIES OF SODIUM.

(AIP) Auto Ignition Point(C.): 115

(EXP) ~~Explosiveness~~: REACTIVE AT HIGH TEMPERATURES OR PRESSURE.

(MLT) Melting Point (C.): 97.82

(MTC) Melting Characteristics: 97.82 DEGREES CELSIUS (MERCK* 83/WIN) UPDATED 3/84

(BLP) Boiling Point (C.): 881.4

(BOC) Boiling Characteristics: 881.4 DEGREES CELSIUS (MERCK* 83/WIN) UPDATED 3/84

(SLC) Solubility Characteristics: DECOMPOSES

(SPG) Specific Gravity: .9712

(VPN) Vapor Pressure (mm Hg): 1.2; 100

(VPT) Vapor Pressure Text: 1.2 MM HG AT 400 DEGREES CELSIUS; 100 MM HG AT 701 DEGREES CELSIUS.

(VDN) Vapor Density: .003; .04

(VDT) Vapor Density Text: .003 AT 900 DEGREES CELSIUS; .04 AT 1800 DEGREES CELSIUS.

(PER) Persistency: CAN PERSIST IN CATIONIC FORM INDEFINITELY.

(PFA) Potential for Accumulation: NEGATIVE.

(FTB) Fresh Water Toxicity Text:
DELETED

(ATL) Chronic Animal Toxicity Limit (ppm): 1000

(ATR) Chronic Animal Toxicity Limit (Reference): THRESHOLD (E188** 0001)

(LVN) Livestock Toxicity (ppm): 2000

(LVR) Livestock Toxicity (Reference): LIMITING, (E188** 0001)

(IRN) Irrigable Plants (ppm): .069

(IRR) Irrigable Plants (Reference): CITRUS, (CWQPAV 0001)

(TRT) Major Species Threatened: HUMANS WITH RENAL OR CARDIAC DISABILITIES.

(INH) Inhalation Limit (Value): .002

(INT) Inhalation Limit (Text): (AS HYDROXIDE).

(DRC) Direct Contact: ~~WILL BURN MOIST SKIN OR EYES.~~

(JNS) General Sensation: ODORLESS

(LTT) Taste Threshold, Lower (ppm): .034

(LTR) Taste Threshold, Lower (Reference): AS CARBONATE (CWQPAV 0001)

(MTT) Taste Threshold, Medium (ppm): 135

(MTR) Taste Threshold, Medium (Reference): AS CHLORIDE OR ACETATE (CWQPAV 0001)

(UTT) Taste Threshold, Upper (ppm): 290

(UTR) Taste Threshold, Upper (Reference): AS BICARBONATE (CWQPAV 0001)

(SAF) Personal Safety Precautions: SAFETY GOGGLES AND IMPERVIOUS CLOTHING SHOULD BE WORN TO PREVENT CAUSTIC BURNS. DUST RESPIRATORS MAY BE REQUIRED UNDER EXTREME CONDITIONS.

(AHL) ~~Acute Hazard Level~~: HIGHLY CAUSTIC TO SKIN. DANGEROUS AS PURE METAL VIA ALL CONTACT ROUTES. EMITS TOXIC OXIDE FUMES WHEN HEATED IN AIR. FORMS CAUSTIC SOLUTION IN WATER.

(CHL) ~~Chronic Hazard Level~~: NO CHRONIC TOXICITY TO HUMANS IS RECOGNIZED.

(HEL) Degree of Hazard to Public Health: SODIUM IN DRINKING WATER MAY BE HARMFUL TO PERSONS SUFFERING FROM CARDIAC, RENAL, AND CIRCULATORY DISEASES AND AS MUCH AS 200 MG OF SODIUM FROM DRINKING WATER MAY BE INJURIOUS. ALTHOUGH IT HAS BEEN REPORTED THAT DRINKING WATER OF GOOD QUALITY MAY CONTAIN UP TO 115 MG/L OF SODIUM, HUBBARD RECOMMENDS A LIMIT OF 10 MG/L AS DESIRABLE. ~~CAUSTIC TO SKIN. EMITS TOXIC OXIDE DUSTS WHEN HEATED IN AIR. HIGHLY TOXIC WHEN EXPOSED AS METAL.~~

(AIR) Air Pollution: LOW

(ACT) Action Levels: NOTIFY FIRE AUTHORITY. ~~ISOLATE FROM WATER. EVACUATE AREA.~~ IF FIRE PRODUCES EXCESSIVE OXIDE DUSTS, NOTIFY AIR AUTHORITY.

(AML) In Situ Amelioration: SEEK PROFESSIONAL ENVIRONMENTAL ENGINEERING ASSISTANCE THROUGH EPA'S ENVIRONMENTAL RESPONSE TEAM (ERT), EDISON, NJ, 24-HOUR NO. 201-321-6660. ~~NEUTRALIZE WITH ACETIC ACID.~~

(SHR) Beach/Shore Restoration: WASH WITH DILUTED ACETIC ACID.

(AVL) Avail. of Countermeasure Material: ACETIC ACID - PLASTIC MANUFACTURERS, ELECTRONIC INDUSTRIES.

(DIS) ~~Disposal Method: SODIUM RESIDUES CAN BE BURNED BY ADDING TO OPEN FIRE OF OIL-SOAKED RAGS, COKE, OR CHARCOAL IN A DRY, WELDED STEEL PAN. AVOID BREATHING OXIDE FUMES. SODIUM IN WATER CAN ALSO BE DILUTED AND NEUTRALIZED WITH ACID.~~

(DSN) Disposal Notification: CONTACT LOCAL FIRE AUTHORITY.

(IFP) Industrial Fouling Pot.: MORE THAN 50 MG/L OF SODIUM PLUS POTASSIUM IN BOILER WATERS MAY CAUSE FOAMING.

(WAT) ~~Major Water Use Threatened: POTABLE SUPPLY, INDUSTRIAL, RECREATION~~

(LOC) Probable Location and State of Material: SILVER WHITE METAL. GRAYS UPON EXPOSURE TO AIR. ~~VIOLENTLY DECOMPOSED BY WATER. WILL DISSOLVE AS NaOH.~~

(DRT) Soil Chemistry: HIGH SODIUM LEVELS CAN DISPERSE SOILS.

(HQH) Water Chemistry: ~~DECOMPOSES VIOLENTLY IN WATER TO FORM NaOH.~~

(COL) Color in Water: COLORLESS

(DAT) Adequacy of Data: FAIR

North Loop West Industrial Park**EXHIBIT "A"**

A tract of land containing 3.9707 acres, more or less, out of the W.P. Morton Survey, Abstract 539, in Harris County, Texas, and being a part of and out of that certain tract of land containing 4.57998 acres, more or less, as described in Deed to Jack H. Fields, et al, recorded in Volume 8355, Page 95 of the Deed Records of Harris County, Texas, and being a portion of that certain 14.15 acre tract of land as described in Deed from Arnold Prause, to B.J. Brandt, recorded in Volume 1811, Page 629 of the Deed Records of Harris County, Texas, said 14.15 acre tract being a portion of that certain 25 acre, more or less, tract of land described in Deed from Emile Kuhn, et al, to Henry Paschen, recorded in Volume 424, Page 476 of the Deed Records of Harris County, Texas, said 3.9707 acres, more or less, being more fully described as follows:

BEGINNING at a 1 inch iron pipe marking the intersection of the South line of the above described 14.15 acre tract described in Deed recorded in Volume 1811, Page 629 of the Deed Records of Harris County, Texas, and the Easterly line of Ella Boulevard, as described in Easement Deed from B.J. Brandt et ux, to the City of Houston, recorded in Volume 3184, Page 653 of the Deed Records of Harris County, Texas;

THENCE East along the South line of the herein described 3.9707 acre tract a distance of 1622.15 feet to a 1/2 inch iron rod in the Westerly line of a 60 foot wide drainage easement conveyed to Harris County Flood Control District by instrument(s) recorded in Volume 2092, Page 443 of the Deed Records of Harris County, Texas;

THENCE North 34 deg. 03 min. 00 sec. East along the Westerly line of said drainage easement a distance of 144.45 feet to a point in the North line, being the Northeast corner of said 3.9707 acre tract;

THENCE West along the said North line of subject tract a distance of 1395.35 feet to a fence corner, also being the Northeast corner of a tract of land containing 0.60929 acre, more or less, as described in Deed to Ray Allen Mauldin, recorded in Volume 8436, Page 338 of the Deed Records of Harris County, Texas;

THENCE South along the East line of said 0.60929 acre tract, as described in Deed to said Ray Allen Mauldin a distance of 84.68 feet to a fence corner;

THENCE West a distance of 310.08 feet along the South line of the said Ray Allen Mauldin tract to a 1 inch iron pipe being a point in the East line of said Ella Boulevard;

THENCE in a Southeasterly direction along the curve to the right having a radius of 2682.06 feet, and a central angle of 1 deg. 00 min. 46 sec., a distance of 35.07 feet to the **PLACE OF BEGINNING**, a containing 172,963 square feet or 3.9707 acres, more or less.

USEPA, to Chemical Decontamination Corp

Doc # OPTS-62028 - PCB

J 4.3 File

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

JAN 24 1985

OFFICE OF
PESTICIDES AND TOXIC SUBSTANCES

Mr. Robert G. Layman
President, Chemical Decontamination
Corporation
5 Riga Lane
Birdsboro, Pennsylvania 19508

Dear Mr. Layman:

Enclosed is a document entitled "Approval to Dispose of Polychlorinated Biphenyls". This document permits Chemical Decontamination Corporation (Chem decon) to chemically destroy polychlorinated biphenyls (PCBs) in: (1) mineral oil dielectric fluid (MODEF) containing less than or equal to 650 ppm PCBs, and (2) other oils containing less than 500 ppm PCBs, subject to the listed conditions of approval. This approval is issued pursuant to Section 6(e)(1) of the Toxic Substances Control Act (TSCA) of 1976 (Public Law 94-469) and the Federal PCB Regulations, 40 CFR Part 761.60(e) (48 FR 13185, March 30, 1983).

The approval is based upon the ability of the Chem decon PCB Destruction Process to destroy PCBs to a level below 2 parts per million (ppm) with no detectable PCB emissions to air or releases to water. (The 2 ppm was chosen because it is the Environmental Protection Agency (EPA)-designated limit of detection of PCBs in oil). In addition, the approval is based upon the Agency's conclusion that the Chem decon PCB Destruction Process does not present an unreasonable risk of injury to public health or the environment.

This approval shall be effective January 25, 1985 and shall extend to January 25, 1988. The approval may be withdrawn, or further conditions may be added to it at any time EPA has reason to believe that operation of the Chem decon PCB Destruction Process presents an unreasonable risk of injury to health or the environment. Withdrawal of the approval, or the imposition of further conditions, may also result if new information requires changes, or EPA issues new regulations or standards for issuing permits. Moreover, violation of any condition included as part

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of this approval may subject Chem decon to enforcement action and/or termination of the approval.

You should advise your customers that if the MODEF is returned to a transformer after being successfully treated by the Chem decon PCB Destruction Process, the transformer cannot be reclassified unless the fluid is tested following a minimum of three months of in-service use. In-service use is defined as use under electrically loaded conditions that raise the temperature of the dielectric fluid to at least 50 °C. Furthermore, if the pretreatment MODEF had a PCB concentration of 50 ppm or more, and treatment with the Chem decon PCB Destruction Process did not reduce this concentration to less than 2 ppm, the MODEF must still be disposed of as though it contained the original concentration of PCBs.

In this approval, the PCB level in the untreated MODEF has been limited to a maximum concentration of 650 ppm. The PCB level in other oils has been limited to a maximum concentration of 500 ppm. These restrictions prevent Chem decon from treating MODEF and other oils that contain higher concentrations of PCBs. Chem decon may not blend PCB-laden MODEF or other oils to reduce the PCB concentration to within the maximum permissible concentrations for treatment. Please be advised that approval for treating higher concentrations of PCBs in MODEF or other oils may be considered when Chem decon demonstrates such capabilities to the satisfaction of EPA. Such demonstrations may be accomplished either during commercial processing or through other controlled experimentation. Authorized EPA representatives may be present to witness the demonstrations and obtain split samples for verification of analytical results.

It is the responsibility of you and your company, Chemical Decontamination Corporation, to comply with all applicable provisions of TSCA and the Federal PCB Regulations in processing the PCB-containing MODEF or other oils. Violation of any of the applicable provisions and the conditions of approval may be cause for rescission of this approval. Furthermore, this approval does not relieve you of the responsibility to comply with all other applicable Federal, State and local regulations and ordinances for transporting, siting, operation, and maintenance of the Chem decon mobile unit(s).

EPA reserves the right to inspect the Chem decon mobile unit(s), to be used for the disposal of PCBs, and the records which Chem decon is required to maintain under the Federal PCB Regulations during operation and at other reasonable times.

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Please contact Jared Flood of my staff at (202) 382-3962 if you have any questions pertaining to this approval.

Sincerely,

/ s / Signed

Don R. Clay, Director
Office of Toxic Substances

Enclosure

cc: Regional Administrators I - X

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UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

IN THE MATTER OF)	APPROVAL TO DISPOSE
)	
CHEMICAL DECONTAMINATION)	OF POLYCHLORINATED
)	
CORPORATION)	BIPHENYLS (PCBs)
)	
BIRDSBORO, PENNSYLVANIA)	

AUTHORITY

This approval is issued pursuant to Section 6(e)(1) of the Toxic Substances Control Act of 1976, Public Law No. 94-469, and the Federal PCB Regulations, 40 CFR 761.60(e) (48 FR 13185, March 30, 1983).

EFFECTIVE DATE

This approval shall be effective upon the signature of the Director of the Office of Toxic Substances.

BACKGROUND

Section 6(e)(1)(A) of the Toxic Substances Control Act (TSCA) requires that EPA promulgate rules for the disposal of polychlorinated biphenyls (PCBs). The rules implementing section 6(e)(1)(A) were published in the Federal Register of May 31, 1979 (44 FR 31514) and recodified in the Federal Register of May 6, 1982 (47 FR 19527). Those rules, among other things, require that various types of PCBs and PCB Articles be disposed of in EPA-approved landfills (40 CFR 761.75), incinerators (40 CFR 761.70), high efficiency boilers (40 CFR 761.60), or by alternative methods (40 CFR 761.60(e)) that demonstrate a level of performance equivalent to EPA-approved incinerators or high efficiency boilers. The rules also designated Regional Administrators as the approval authority for PCB disposal facilities.

On March 30, 1983, EPA issued a procedural rule amendment to the PCB rule (48 FR 13185). This procedural rule change transferred the review and approval authority of mobile and other PCB disposal facilities that are used in more than one region to the Office of Pesticides and Toxic Substances (OPTS). The purpose of the amendment is to eliminate duplication of effort in the regional offices and to unify the Agency's approach to PCB disposal. The amendment gives the Assistant Administrator authority to issue nationwide approvals (i.e., approvals which will be effective in all ten EPA regions) to mobile and other PCB disposal facilities that are used in more than one region. The Assistant Administrator subsequently delegated this approval authority to the Director of the Office of Toxic Substances (OTS)

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on January 23, 1984.

Chemical Decontamination Corporation (Chem decon) submitted a preliminary application and demonstration plan to EPA for nationwide approval to treat mineral oil dielectric fluid (MODEF) containing PCBs in November 1983. Chem decon submitted supplemental information, including revisions to its application and demonstration plan, in December 1983 and March 1984. This plan was approved by the Director of the Office of Toxic Substances on June 29, 1984, and Chem decon conducted research and development test runs on July 2 and 3, 1984, at the Metropolitan Edison (Met. Ed.) central facility in Reading, Pennsylvania. Chem decon commenced a full-scale commercial demonstration at the Met. Ed. central facility on September 10, 1984. EPA personnel witnessed the initial stages of the demonstration to verify Chem decon's on-site chemical analysis of the treated MODEF and to obtain split samples for subsequent analysis and verification. Chem decon completed the demonstration on October 5, 1984.

FINDINGS

1. Chemical Decontamination Corporation (Chem decon) of Birdsboro, Pennsylvania proposes to chemically destroy polychlorinated biphenyls (PCBs) contained in MODEF, using one or more mobile unit(s).

2. In the demonstration in Reading, Pennsylvania, the MODEF containing PCBs was fed into a reaction vessel and mixed with a reagent which removed the chlorine atoms from the biphenyls. This dechlorination process produced inorganic chloride, and polyphenylene. Treatment continued in the reaction vessel until Chem decon, through its on-site analysis, confirmed that the concentration of PCBs in the MODEF had been reduced to the EPA-designated level of less than 2 parts per million (ppm) per resolvable gas chromatographic peak. The treatment products were filtered from the MODEF, and the filtered fluid was returned to an on-site tanker.

A sample of each batch of treated MODEF was drawn and analyzed by gas chromatography for the concentration of PCBs. Chem decon recorded and retained written and graphic verification of the analyses and submitted verification to EPA.

Pertinent test results were submitted to EPA in a test report dated November 12, 1984. The test results demonstrate that the Chem decon PCB Destruction Process is capable of destroying PCBs in MODEF contaminated with a PCB level as high as 650 ppm.

3. The Chem decon PCB Destruction Process is a closed process that is capable of treating PCB-contaminated MODEF on-site through the use of mobile units. The closed process minimizes the potential for exposure to workers and the general population. In addition, the on-site treatment capability of the

Chem decon mobile unit virtually eliminates the potential risk of a spill of PCB materials during transportation.

Transportation costs contribute significantly to the total cost of disposal. Since the on-site treatment capability of the Chem decon mobile unit will eliminate or reduce transportation of PCBs, the total cost of disposal may be reduced. Small firms, in particular, could benefit from the reduced cost of PCB disposal.

4. The Chem decon PCB Destruction process, as designed, does not emit harmful materials into the environment. Solid wastes are produced in small amounts in the form of spent filter media and sludge. These solid wastes contain polyphenylene substances, sodium chloride, and a small amount of treated MODEP. This composition does not present an unreasonable risk of injury to human health or the environment.

5. In the event of a malfunction during processing, the Chem decon mobile unit is designed to allow PCB-containing fluid to be returned to the original tank or container. This fluid can then be treated again.

6. Chem decon has developed and filed with EPA a closure plan for terminating Chem decon mobile units. This plan includes the decontamination and disposal of PCB-contaminated equipment or process materials, and testing of the equipment before it is removed from service to assure that no PCBs are present.

7. Chem decon has provided EPA with a description of its training program for Chem decon process operators and technicians. This program is intended to help ensure that operation of the Chem decon mobile units is in compliance with applicable safety and health standards. The training program, as described, encompasses:

- a. safety, recordkeeping, and sampling and analysis;
- b. operational procedures for using, inspecting, repairing and replacing Chem decon mobile facility equipment, including the monitoring and control system; and
- c. spill prevention, cleanup and emergency response procedures.

8. In 1979, EPA estimated that there were approximately 750 million pounds of PCB material in use in the United States (U.S.) and an additional 29 million pounds in storage awaiting safe disposal. This backlog of PCB waste awaiting disposal has increased substantially due to several PCB regulations. The 40 CFR 761.65(a) storage for disposal requirements limit the storage of all PCB material stored for disposal to one year. This one-year deadline began to run on January 1, 1983. In addition, the use conditions under 40 CFR 761.30 require that transformers and large capacitors near food or feed in

unrestricted areas be removed from service by 1985 and 1988, respectively.

High temperature incineration is a proven destruction method for liquid and non-liquid PCBs, and is particularly effective in destroying high concentration PCB waste. However, only six incinerators have been approved for commercial destruction of PCBs in the U.S. (only two of these are mobile facilities). The availability of the Chem decon mobile unit(s) would provide additional PCB destruction capacity for low concentration PCB material, and increase the availability of incineration capacity for destruction of other high concentration PCB materials.

9. The Chem decon PCB Destruction Process has been shown to have a level of performance equivalent to that of the required thermal destruction methods (incinerators and high efficiency boilers). In the Preamble to the PCB Ban Rule, EPA expressed the expectation that approved incinerators (§761.70) would achieve a destruction efficiency of 99.9999% and that high efficiency boilers (§761.60), which may be used to destroy PCBs in concentrations up to 500 ppm, would achieve a destruction efficiency of 99.9% or greater. While those percentages provide general guidance to determine the approximate destruction efficiency goals for alternate PCB disposal methods under 40 CFR 761.60(e), other factors may be considered in the determination of equivalency. For example, the mathematically calculated PCB destruction efficiency of the Chem decon PCB Destruction Process may be less than that achieved by an EPA-approved incinerator or high efficiency boiler, because the practical limit of detection of PCBs in oils is 2 ppm. However, this is offset by the fact that there are no detectable PCBs in the treated fluid at a detection limit of 2 ppm per resolvable gas chromatographic peak, no detectable PCB emissions, no worker exposure to PCBs, reduced risks associated with the virtual elimination of PCB storage and transportation and the potential cost benefits of on-site treatment.

10. MODEF has properties similar to other oils, but not all liquid hydrocarbon products.

11. Pursuant to 40 CFR 761.60(e) and the aforementioned findings, EPA finds that the Chem decon PCB Destruction Process is equivalent in performance to an EPA-approved incinerator or high efficiency boiler and that it does not pose an unreasonable risk of injury to human health or the environment.

CONDITIONS OF APPROVAL

1. An advance notification must be provided to the Regional Administrator of the EPA Region, the appropriate State official(s), and local official(s) where the Chem decon process is to be used. The notification must be provided to the appropriate official(s) at least 30 days, but not more than one year, in advance of the operation of the destruction process at the site. The notice must include the location (address) and nonconfidential date of the first operation. A specific time will be provided to EPA upon request.
2. The Chem decon PCB Destruction Process, as described in the design drawings and explanations on file in the Office of Toxic Substances, and as demonstrated to EPA in September 1984 may be used by Chemical Decontamination Corporation to destroy PCBs in MODEF and other oils. The concentration of PCBs in the MODEF shall not exceed 650 ppm. The concentration of PCBs in other oils shall not exceed 500 ppm. Chem decon may not blend PCB-laden MODEF or other oils to reduce the PCB concentrations to within the maximum permissible concentrations, 650 ppm for MODEF and 500 ppm for other oils, for treatment. Prior to treatment, the MODEF or other oils must be sampled and analyzed by gas chromatography for the concentration of PCBs in accordance with EPA-approved procedures that are outlined in the following documents:
 - a. "Quality Assurance and Quality Control Procedures for Demonstrating PCB Destruction in Filing for a PCB Disposal Permit," USEPA, June 28, 1983 (Draft);
 - b. "Guidelines for PCB Destruction Permit Applications and Demonstration Test Plans," May 17, 1983 (Draft);
 - c. "Interim Guidelines and Specifications for Preparing Quality Assurance Plans," OAMS-005/80, Office of Research and Development, USEPA, December 29, 1980.Should Chem decon successfully demonstrate to EPA through controlled experimentation that the Chem decon PCB Destruction Process is capable of treating higher concentrations of PCBs in MODEF or other oils, this condition may be modified accordingly. Authorized EPA representatives may witness the demonstration and obtain split samples for verification of analytical results.
3. An estimate of the theoretical time necessary for complete reaction of each batch of MODEF or other oil must be recorded on-site before treatment of the batch is begun. These records must be available for inspection by authorized representatives of EPA and must be retained along with other records required under Conditions (6) and (16).
4. A sample of each batch of treated MODEF or other oil must be

drawn, and analyzed in duplicate (i.e., duplicate analysis) by gas chromatography for the concentration of PCBs at the site where the Chem decon PCB Destruction Process is being used. If the concentration of PCBs in the treated sample is 2 ppm or greater per resolvable gas chromatographic PCB peak (as calculated by comparison to an external standard homolog peak having the nearest retention time to each appropriate PCB peak to be quantified), the fluid must be reprocessed and reanalyzed to show less than 2 ppm per peak (according to the aforementioned method and procedures) before the next batch is treated.

5. If the quality control testing, as described in Condition (4), reveals that the PCBs have not been adequately destroyed after repeated processing (not to exceed three times the estimated theoretical time necessary for complete reaction), the affected unit shall cease operation. The facility operator must notify the PCB Disposal Site Coordinator in the appropriate EPA region immediately and file a written report with that region within seven (7) days. The affected unit shall not resume operation until the problem has been corrected to the satisfaction of the appropriate EPA region.

6. Provisions must be made to assure that the following process elements are suitably monitored and recorded for each batch of PCBs processed, such that materials harmful to health or the environment are not inadvertently released:

- a. quantity and quality of PCBs and other raw materials (i.e., feedstock and chemical reagents) charged into the reaction vessel;
- b. quantity and quality of treated fluid produced including wastes (the method of disposal and location of the disposal facility for each waste should be documented);
- c. temperature and pressure of reaction in at least one-half hour intervals;
- d. date, time and duration of run; and
- e. name, address, and telephone number of operator and supervisor.

The records must be compiled and maintained in accordance with the time(s) and location(s) specified in Condition (16).

7. In the event Chem decon or an authorized facility operator of the Chem decon mobile unit believes, or has reason to believe, that a release has or might have occurred, the facility operator must inform the appropriate EPA region by telephone immediately.

A written report describing the incident must be submitted by the close of business on the next regular business day following the incident. No PCBs may be processed in that facility until

the release problem has been corrected to the satisfaction of the appropriate EPA region.

8. Any spills of PCBs or other fluids shall be promptly controlled and cleaned up as provided in Chem decon's spill prevention plan, and in accordance with the PCB spill cleanup procedures of the appropriate EPA region. In addition, a written report describing the spill, operations involved, cleanup actions and changes in operation to prevent such spills in the future must be submitted to the appropriate EPA region within five (5) business days.

PCB spills must be reported in accordance with the PCB spill reporting requirements prescribed under §311 of the Clean Water Act for discharges to navigable waters and under the Comprehensive Environmental Response, Compensation, and Liability Act (Superfund) for discharges to other media.

9. Chem decon must take all necessary precautionary measures to ensure that operation of the Chem decon mobile unit(s) is in compliance with the applicable safety and health standards, as required by Federal, State and local regulations and ordinances.

10. The Chem decon mobile unit shall be secured (e.g., fence, alarm system, etc.) at each commercial site to restrict public access to the area. Any bodily injury occurring as a result of the Chem decon PCB Destruction Process must be reported to the PCB Disposal Site Coordinator in the appropriate EPA region by the next regular business day.

11. Any reports required by Conditions (5), (7), (8), and (10) are to be submitted by telephone to the appropriate regional PCB Disposal Site Coordinator within the time frame specified. In addition, Chem decon shall file written reports with the Regional Administrator of the appropriate EPA region, and the Assistant Administrator for the Office of Pesticides and Toxic Substances (OPTS) within the time frame specified in the aforementioned conditions.

12. Chem decon shall be responsible for ensuring that personnel directly involved with the handling or disposal of PCB-contaminated fluid using the Chem decon PCB Destruction Process are demonstrably familiar with the general requirements of this approval. At a minimum, this must include:

- a. the type of fluid which may be treated using the Chem decon PCB Destruction Process, and the upper limit of PCB contamination which may be treated;
- b. basic recordkeeping requirements under this approval and the location of records;
- c. notification requirements;

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- d. waste disposal requirements for process and by-product wastes generated during the operation of the Chem decon PCB Destruction Process; and
- e. reporting requirements.

In this regard, Chem decon must maintain on-site during the operations of its mobile unit a copy of this approval; the spill prevention and cleanup plan; and sampling and analytical procedures used to determine PCB concentrations in untreated and treated materials.

13. Untreated PCB fluids may not be transported off-site on the Chem decon mobile unit. PCB-contaminated equipment (i.e., reactors, hoses, etc.) on the mobile unit may be transported off-site, in accordance with 40 CFR Section 761.40 and the U.S. Department of Transportation (USDOT) requirements of Title 49, CFR Part 172. Such requirements include placarding the mobile facility and labelling all PCBs.

14. All wastes generated by the Chem decon PCB Destruction Process, which are found to have resolvable gas chromatographic peaks of 2 or more ppm PCB, as calculated by comparison to an external standard homolog peak having the nearest retention time to each appropriate PCB peak to be quantified, must be reprocessed and the PCB concentration reduced to less than 2 ppm per resolvable gas chromatographic peak, or disposed of (as if the wastes contained the original PCB concentration of the pretreated MODEF or other oil) in a PCB disposal facility approved by EPA under 40 CFR Part 761. EPA-approved analytical methods for PCBs in different phases (water, solids and oil) must be used by Chem decon in making such determinations.

15. Chem decon shall incorporate financial assurance of closure and liability coverage provisions into its closure plan. These provisions must be equivalent to those specified in 40 CFR Part 264, Subpart H of the Resource Conservation and Recovery Act (RCRA), and provide funds for:

- a. proper closure of the mobile PCB disposal units, and
- b. compensating others for bodily injury and property damage caused by accidents arising from operations of the mobile disposal units.

Chem decon must file with the Assistant Administrator for OPTS documentation of compliance with these requirements by July 1, 1985.

16. Chem decon must develop and maintain the following records:

- a. the name and address of each client whose MODEF or other oil was processed by the Chem decon PCB Destruction Process;

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- b. the date such service was performed;
- c. an identification of the Chem decon PCB Destruction Process unit performing the service;
- d. the amount of MODEX or other oil processed;
- e. a copy of the gas chromatogram from the tests required by conditions (2) and (4);
- f. the method of disposal and location of the disposal facility for each waste as described in condition 6(b); and
- g. a summary of the total number of gallons of PCB-contaminated fluid processed through the Chem decon PCB Destruction Process during the previous calendar year.

The documents must be compiled within 60 days of the treatment date, must be kept at one centralized location, and must be available for inspection by authorized representatives of EPA. Such documents shall be maintained for at least five years. If Chem decon terminates business, these records or their copies must be submitted to the Assistant Administrator for OPTS.

In addition, Chem decon must maintain, aboard the mobile unit, a record of the PCB disposal services performed by the unit during the previous month. These records must be available for inspection by authorized representatives of EPA.

17. Chem decon must file a written pre-operation report with the Assistant Administrator for OPTS within thirty (30) days from the date of manufacture of each additional Chem decon mobile unit which is to be operated in the United States. This report shall contain the following information:

- a. date of manufacture of the unit;
- b. identification and/or serial number of the new Chem decon mobile unit;
- c. certification by an independent, registered professional engineer to the effect that the Chem decon mobile unit is substantially identical to the original unit in terms of engineering design, hardware, process capacity, quality and workmanship;
- d. certification by the chief executive officer of Chemical Decontamination Corporation signifying that the Chem decon mobile unit construction has been completed in such manner; and
- e. a list of all nonsubstantive changes made to the design 000023

and construction of the new Chem decon mobile unit which are not identical to the original Chem decon mobile unit.

18. No major modifications may be made to the Chem decon unit design, as described in the application and demonstration plan for this approval, without written approval of the Assistant Administrator for OPTS. For the purpose of this approval, "major modification" shall be defined as any change to capacity, design, efficiency, waste type, or any other changes affecting overall performance or environmental impact.

19. Chem decon must notify EPA at least 30 days before transferring ownership in the Chem decon PCB Destruction Process. Chem decon must also submit to EPA, at least 30 days before such transfer, a notarized affidavit signed by the transferee which states that the transferee will abide by Chem decon's EPA approval. Within thirty days of receiving such notification and affidavit, EPA will issue an amended approval substituting the transferee's name for Chem decon's name, or EPA may require the transferee to apply for a new PCB disposal approval. In the latter case, the transferee must abide by Chem decon's EPA approval until EPA issues the new approval to the transferee.

20. Chem decon shall comply with all applicable requirements of the Federal PCB Regulation, 40 CFR Part 761, in the operation of the mobile Chem decon PCB Destruction unit(s). Particular note shall be given to:

- a. 40 CFR, section 761.65 - storage for disposal;
- b. 40 CFR, section 761.79 - decontamination; and
- c. 40 CFR, section 761.180 - records and monitoring.

21. The conditions of this approval are severable, and if any provision of this approval or any application of any provision is held invalid, the remainder of this approval shall not be affected thereby.

22. This approval shall expire on January 25, 1988. For a renewal approval, EPA may require additional information and/or testing of the Chem decon PCB Destruction Process. In order to continue the effectiveness of this approval pending EPA action on reissuance, Chem decon must submit a renewal request letter to EPA at least 90 days, but not more than 180 days, prior to the expiration date of this approval.

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APPROVAL

1. Approval to dispose of PCBs is hereby granted to Chemical Decontamination Corporation of Birdsboro, Pennsylvania subject to the conditions expressed herein, and consistent with the material and data included in the application filed by the company. EPA reserves the right to impose additional conditions when it has reason to believe that the continued operation of the Chem decon mobile unit presents an unreasonable risk to public health or the environment, new information requires changes, or EPA issues new regulations or standards for issuing permits.

Any departure from the conditions of this approval or the terms expressed in the application must receive prior written authorization of the Assistant Administrator for the Office of Pesticides and Toxic Substances. In this context, "application" shall be defined as all data and materials which have been received by this Agency from Chemical Decontamination Corporation regarding the Chem decon PCB Destruction Process.

2. This approval to dispose of PCBs does not relieve Chemical Decontamination Corporation of the responsibility to comply with all applicable Federal, State and local regulations. Violation of any applicable regulations will be subject to enforcement action, which may include termination of this approval. This approval may be rescinded at any time for failure to comply with the terms and conditions herein, or for other reasons which the Assistant Administrator for the Office of Pesticides and Toxic Substances deems necessary to protect the public health and the environment.

3. Chemical Decontamination Corporation shall be responsible for the actions of any authorized Chem decon PCB Destruction Process employees when those actions are within the scope of operating or moving the Process, and shall assume full responsibility for compliance with all applicable Federal, State and local regulations including, but not limited to, any advance or emergency notification and accident reporting requirements.

4. EPA reserves the right for its employees or agents to inspect Chem decon PCB disposal activities at any location or reasonable time.

JF 11/27/90

LS / Signed

Date

Don R. Clay, Director
Office of Toxic Substances

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SODIUM HYDROXIDE (1310-73-2) (ARTICLE 2-200)

Common Name: SODIUM HYDROXIDE

CAS Number: 1310-73-2

DOT Number: UN 1823/UN 1824

RTK Substance number: 1706

Date: January 1986

HAZARD SUMMARY

- * Sodium Hydroxide can affect you when breathed in.
- * Breathing the dust or droplets of solution can irritate or damage the lungs. Higher levels can cause a buildup of fluid in the lungs (pulmonary edema), a medical emergency.
- * Contact can cause severe skin burns.
- * Sodium Hydroxide is a CORROSIVE SOLID or LIQUID and can cause severe burns of the eyes, resulting in blindness.

IDENTIFICATION

Sodium Hydroxide is a white, odorless solid. It is used in water solutions in a wide range of industrial and chemical processes.

REASON FOR CITATION

- * Sodium Hydroxide is on the Hazardous Substance List because it is regulated by OSHA, and cited by ACGIH, NIOSH, NFPA and EPA.
- * This chemical is also on the Special Health Hazard Substance List because it is CORROSIVE.
- * Definitions are attached.

HOW TO DETERMINE IF YOU ARE BEING EXPOSED

- * Exposure to hazardous substances should be routinely evaluated. This may include collecting personal and area air samples. You can obtain copies of sampling results from your employer. You have a legal right to this information under OSHA 1910.20.
- * If you think you are experiencing any work related health problems, see a doctor trained to recognize occupational diseases. Take this Fact Sheet with you.

WORKPLACE EXPOSURE LIMITS

OSHA: The legal airborne permissible exposure limit (PEL) is 2 mg/m³ averaged over an 8 hour workshift.

NIOSH: The recommended airborne exposure limit is 2 mg/m³, which should not be exceeded during any 15 minute work period.

ACGIH: The recommended airborne exposure limit is 2 mg/m³, which should not be exceeded at any time.

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WAYS OF REDUCING EXPOSURE

- * Where possible, enclose operations and use local exhaust ventilation at the site of chemical release. If local exhaust ventilation or enclosure is not used, respirators should be worn.
- * Wear protective work clothing.
- * Wash thoroughly immediately after exposure to Sodium Hydroxide.
- * Post hazard and warning information in the work area. In addition, as part of an ongoing education and training effort, communicate all information on the health and safety hazards of Sodium Hydroxide to potentially exposed workers.

This Fact Sheet is a summary source of information of all potential and most severe health hazards that may result from exposure. Duration of exposure, concentration of the substance and other factors will affect your susceptibility to any of the potential effects described below.

HEALTH HAZARD INFORMATION

Acute Health Effects

The following acute (short term) health effects may occur immediately or shortly after exposure to Sodium Hydroxide:

- * Sodium Hydroxide causes very severe burns of the eyes which can cause permanent damage.
- * Contact can cause severe skin burns.
- * Breathing Sodium Hydroxide can irritate the mouth, nose, and throat. Exposure to higher levels may irritate the lungs, causing coughing and/or shortness of breath. Still higher exposure can cause a buildup of fluid in the lungs (pulmonary edema). This can cause death.

Chronic Health Effects

The following chronic (long term) health effects can occur at some time after exposure to Sodium Hydroxide and can last for months or years:

Cancer Hazard

- * According to the information presently available to the New Jersey Department of Health, Sodium Hydroxide has not been tested for its ability to cause cancer in animals.

Reproductive Hazard

- * According to the information presently available to the New Jersey Department of Health, Sodium Hydroxide has not been tested for its ability to adversely affect reproduction.

Other Long Term Effects

- * Very irritating substances may affect the lungs. It is not known whether Sodium Hydroxide causes lung damage.

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MEDICAL

Medical Testing

For those with frequent or potentially high exposure (half the TLV or greater) the following are recommended before beginning work and at regular times after that:

- * Lung function tests.

If symptoms develop or overexposure is suspected, the following may be useful:

- * Consider chest x ray after acute overexposure.

Any evaluation should include a careful history of past and present symptoms with an exam. Medical tests that look for damage already done are not a substitute for controlling exposure.

Request copies of your medical testing. You have a legal right to this information under OSHA 1910.20.

Mixed Exposures

Because smoking can cause heart disease, as well as lung cancer, emphysema, and other respiratory problems, it may worsen respiratory conditions caused by chemical exposure. Even if you have smoked for a long time, stopping now will reduce your risk of developing health problems.

WORKPLACE CONTROLS AND PRACTICES

Unless a less toxic chemical can be substituted for a hazardous substance, ENGINEERING CONTROLS are the most effective way of reducing exposure. The best protection is to enclose operations and/or provide local exhaust ventilation at the site of chemical release. Isolating operations can also reduce exposure. Using respirators or protective equipment is less effective than the controls mentioned above, but is sometimes necessary.

In evaluating the controls present in your workplace, consider: (1) how hazardous the substance is, (2) how much of the substance is released into the workplace and (3) whether harmful skin or eye contact could occur. Special controls should be in place for highly toxic chemicals or when significant skin, eye, or breathing exposures are possible.

In addition, the following controls are recommended:

- * Where possible, automatically pump liquid Sodium Hydroxide from drums or other storage containers to process containers.

- * Specific engineering controls are recommended for this chemical by NIOSH. Refer to the NIOSH criteria document: Occupational Exposure to Sodium Hydroxide #76 105.

Good WORK PRACTICES can help to reduce hazardous exposures. The following work practices are recommended:

- * Workers whose clothing has been contaminated by Sodium Hydroxide should change into clean clothing immediately.
- * Contaminated work clothes should be laundered by individuals who have been informed of the hazards of exposure to Sodium Hydroxide.
- * Eye wash fountains in the immediate work area should be provided for emergency use.
- * If there is the possibility of skin exposure, emergency shower facilities should be provided.
- * On skin contact with Sodium Hydroxide, immediately wash or shower to remove the chemical. At the end of the workshift, wash any areas of the body that may have contacted Sodium Hydroxide, whether or not known skin contact has occurred.
- * Do not eat, smoke, or drink where Sodium Hydroxide is handled, processed, or stored, since the chemical can be swallowed. Wash hands carefully before eating or smoking.
- * Do not dry sweep for cleanup. Use a vacuum or a wet method to reduce dust during cleanup.

PERSONAL PROTECTIVE EQUIPMENT

WORKPLACE CONTROLS ARE BETTER THAN PERSONAL PROTECTIVE EQUIPMENT. However, for some jobs (such as outside work, confined space entry, jobs done only once in a while, or jobs done while workplace controls are being installed), personal protective equipment may be appropriate.

The following recommendations are only guidelines and may not apply to every situation.

Clothing

- * Avoid skin contact with Sodium Hydroxide. Wear protective gloves and clothing. Safety equipment suppliers/manufacturers can provide recommendations on the most protective glove/clothing material for your operation.
- * All protective clothing (suits, gloves, footwear, headgear) should be clean, available each day, and put on before work.
- * ACGIH recommends Natural Rubber, Nitrile, or Polyvinyl Chloride as protective materials.

Eye Protection

- * Wear splash proof chemical goggles and face shield when working with liquid, or wear dust proof goggles and face shield when working with powders or dust, unless full

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facepiece respiratory protection is worn.

Respiratory Protection

IMPROPER USE OF RESPIRATORS IS DANGEROUS. Such equipment should only be used if the employer has a written program that takes into account workplace conditions, requirements for worker training, respirator fit testing and medical exams, as described in OSHA 1910.134.

- * Engineering controls must be effective to ensure that exposure to Sodium Hydroxide does not occur.
- * Where the potential exists for exposures near or over 2 mg/m³, use a MSHA/NIOSH approved respirator with a high efficiency particulate filter with a full facepiece. Greater protection is provided by a powered air purifying respirator. Particulate filters must be checked every day before work for physical damage, such as rips or tears, and replaced as needed.
- * If while wearing a filter, cartridge or canister respirator, you can smell, taste, or otherwise detect Sodium

Hydroxide, or in the case of a full face piece respirator you experience eye irritation, leave the area immediately. Check to make sure the respirator to face seal is still good. If it is, replace the filter, cartridge, or canister. If the seal is no longer good, you may need a new respirator.

- * Be sure to consider all potential exposures in your workplace. You may need a combination of filters, prefilters, cartridges, or canisters, to protect against different forms of a chemical (such as vapor and mist) or against a mixture of chemicals.
- * Exposure to 200 mg/m³ is immediately dangerous to life and health. If the possibility of exposures above 200 mg/m³ exists use an MSHA/NIOSH approved self contained breathing apparatus with a full facepiece operated in continuous flow or other positive pressure mode.

HANDLING AND STORAGE

- * Prior to working with Sodium Hydroxide you should be trained on its proper handling and storage.
- * Sodium Hydroxide must be stored to avoid contact with WATER, ACIDS, FLAMMABLE LIQUIDS, ORGANIC HALOGEN COMPOUNDS, METALS, or NITRO COMPOUNDS, because violent reactions occur.
- * Store in tightly closed containers in a cool well ventilated area away from WATER.

Common Name: SODIUM HYDROXIDE
DOT Number: UN 1823/UN 1824
DOT Emergency Guide code: 60
CAS Number: 1310-73-2

Hazard rating NJ DOH NFPA

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FLAMMABILITY 0
REACTIVITY 1
CORROSIVE LIQUID OR SOLID
POISONOUS GASES ARE PRODUCED IN FIRE

Hazard Rating Key: 0=minimal; 1=slight; 2=moderate;
3=serious; 4=severe

FIRE HAZARDS

- * Extinguish fire using an agent suitable for type of surrounding fire. Sodium Hydroxide itself does not burn.
- * POISONOUS GASES ARE PRODUCED IN FIRE.
- * Sodium Hydroxide may ignite combustibles (wood, paper, oil, etc.)
- * If employees are expected to fight fires, they must be trained and equipped as stated in OSHA 1910.156.

SPILLS AND EMERGENCIES

If Sodium Hydroxide is spilled or leaked, take the following steps:

- * Restrict persons not wearing protective equipment from area of spill or leak until cleanup is complete.
- * Remove all ignition sources.
- * Ventilate area of spill or leak.
- * Absorb liquids in vermiculite, dry sand, earth, or a similar material and deposit in sealed containers.
- * It may be necessary to contain and dispose of Sodium Hydroxide as a HAZARDOUS WASTE. Contact your state Environmental Program for specific recommendations.

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FOR LARGE SPILLS AND FIRES immediately call your fire department.

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HANDLING AND STORAGE (See page 4)

FIRST AID

POISON INFORMATION

Eye Contact

- * Instantly flush with large amounts of water. Continue without stopping for at least 30 minutes, occasionally lifting upper and lower lids. Seek medical attention immediately.

Skin Contact

- * Quickly remove contaminated clothing. Immediately wash area with large amounts of water. Seek medical attention immediately.

Breathing

- * Remove the person from exposure.

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- * Begin rescue breathing if breathing has stopped and CPR if heart action has stopped.
- * Transfer promptly to a medical facility.
- * Medical observation is recommended for 24 to 48 hours after breathing overexposure, as pulmonary edema may be delayed.

PHYSICAL DATA

Water Solubility: Highly soluble

OTHER COMMONLY USED NAMES

Chemical Name:

Sodium Hydroxide

Other Names and Formulations:

Lye Solution; Caustic Soda; White Caustic

Not intended to be copied and sold for commercial purposes.

NEW JERSEY DEPARTMENT OF HEALTH

Right to Know Program

CN 368, Trenton, NJ 08625 0368

000033

(25) ~~Christ Murphy~~
686-6406 * Commissioner's office ⇒

2/24/88 Telephone Conversation w/ Bob Layman

Chemical Decontamination Corporation

Chemdecon Corporation was not sold.

B. Layman and Linwood Kemp sold their majority stock in the corporation to RZPZ of Houston, TX

Chemdecon only rented the facility in Birdsboro, PA.
Facility cleaned, closed by Kemp + Layman. Now occupied by a plastics manufacture

119,000 gallons of liquid PCBs processed total.

Chemical Decontamination Corp. Stock

2,000 shares of stock total.

948 - Owned by Layman and Kemp

720 - Treasury Stock

332 - owned by ~25 people

⇒ 948 shares sold to RZPZ on October 31, 1986.

Mobile Unit now located:

North Loop Industrial Park

Building Zero (Ø)

Houston, TX

RZPZ leases this storage facility/warehouse

Unit is not operating.

Bureau of
Lapovate
Taxes
P.O. Box
8909
Houston, TX

686-6602

PA Dept of
Taxation

o RZPZ Company Principal

Dr. Harold Rockaway

me
dress

(713) 654-0864 (Work) Days

Mobile Unit Last Operation at:
ENSCO

White Bluff, Tennessee

April 1987

Mobile Unit moved to N. Loop Industrial Park

on 4/29/87

Chumdeon is still a Pennsylvania Corporation

Layman still listed as President. Layman is still waiting
for name transfer to RZPZ principal owner.

Layman listed as president is inaccurate.

Company wants to eventually apply for R+D approval;
then nationwide approval.

Layman would like to be cc'd on any correspondence from RZPZ

Robert E. Layman

John B. Davis

0030 10

1/25/88 Dr. Harold Rockaway
RZ PZ Inc.
1315 Calhoun
Houston, Texas 77002
(713) 654-0864

Mobile Unit now in storage at:
N. Loop Industrial Park
Warehouse O
Houston, Texas

RKR Associates owns the mobile unit.

RKR leases the unit to Chemdecon / RZ PZ for a royalty.
Chemdecon / RZ PZ are a joint venture.

Rockaway is the majority stockholder in RZ PZ.

(Served Buddy Hall)

Status - Unit was decontaminated at the ENSCO facility, ⇒ Fall 1987.

Seeking contracts for PCB disposal.

They realize the permit has expired.

They will be applying to EPA HQ for a permit.

MAR 29 1988

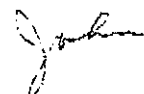
Dr. Harold Rockaway

Dear Dr. Rockaway:

This letter documents our discussions over the telephone on March 28, 1988. As promised, I have sent documentation of EPA's attempts to contact Chemdecon at the address on the letterhead of EPA's last correspondence received from Chemdecon (Enclosure 1) and a copy of the PCB Disposal Permit Application Guidance package (Enclosure 2).

I would like to reiterate that the Chemdecon PCB disposal permit has not been renewed. As you can see from the EPA December 11, 1987 certified mail/return receipt requested letter, which was returned unopened after having been forwarded to two Houston addresses, in order for EPA to consider renewal of the Chemdecon permit there were several information requests based on Chemdecon PCB Disposal Permit requirements. These requests could be summarized as: (1) a requirement for a redemonstration of the Chemdecon process, (2) a requirement to provide proof of proper and sufficient financial assurance, and a requirement to submit copies of annual report data for the entire period of permitted operations. Since there was no response to EPA's December 11, 1987 correspondence and since the Chemdecon permit expired on January 23, 1988, if Chemdecon desires a permit for the mobile PCB disposal unit previously permitted, a new permit application and demonstration test plan must be submitted to EPA for review and approval. In addition to the requirements described in the permit application guidance (Enclosure 2) EPA requires: (1) any additional information which would complete the information requested in EPA's December 11, 1987 letter (Enclosure 1) and (2) written documentation of a transfer of the ownership of the Chemdecon PCB disposal process, as was required in the lapsed Chemdecon permit.

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11/27/90 10:24 202 475 7724 John H. Smith →→ Donna Mullins 0016

EPA has three major concerns about the possibility of permitting future operations: (1) the lack of communication and lack of documentation of the transfer of the ownership of the Chemdecon process; (2) Chemdecon's failure to properly address the financial assurance issues in the February 24, 1987 letter; and (3) Chemdecon's not having a permanent business/operations address or telephone number. These concerns shall be addressed in the permit application review process.

Please feel free to call Joseph P. Davia of my staff at (202) 382-3961 if you have any questions.

Sincerely,

John H. Smith, Ph.D.
Chief, PCB Disposal Section

Enclosures (2)

cc: Ed Cohen, EPA Region III (without Enclosure 2)

Donna Metcalf, EPA Region VI (without Enclosure 2)

POLYCHLORINATED BIPHENYLS (1336-36-3) (ARTICLE 2-59)

Common Name: POLYCHLORINATED BIPHENYLS

CAS Number: 1336-36-3

DOT Number: UN 2315

RTK Substance number: 1554

Date: May 1989

HAZARD SUMMARY

- * Polychlorinated Biphenyls can affect you when breathed in and by passing through your skin.
- * Polychlorinated Biphenyls are CARCINOGENS HANDLE WITH EXTREME CAUTION.
- * They may be teratogens and may damage the adult reproductive system.
- * Exposure can cause an acne like skin rash (called chloracne).
- * They can damage the liver.
- * High exposure can damage the nervous system, causing numbness, weakness and tingling ("pins and needles") in the arms and legs.

IDENTIFICATION

Polychlorinated Biphenyls are a mixture of chemicals that are clear to yellow oily liquids or solids. They are used in insulating fluids for electrical systems.

REASON FOR CITATION

- * Polychlorinated Biphenyls are on the Hazardous Substance List because they are regulated by OSHA and cited by NIOSH, DOT, IARC, NTP, DEP and EPA.
- * These chemicals are on the Special Health Hazard Substance List because they are CARCINOGENS and TERATOGENS.
- * Definitions are attached.

HOW TO DETERMINE IF YOU ARE BEING EXPOSED

- * Exposure to hazardous substances should be routinely evaluated. This may include collecting personal and area air samples. You can obtain copies of sampling results from your employer. You have a legal right to this information under OSHA 1910.20.
- * If you think you are experiencing any work related health problems, see a doctor trained to recognize occupational diseases. Take this Fact Sheet with you.

WORKPLACE EXPOSURE LIMITS

OSHA: The legal airborne permissible exposure limit (PEL) is 1 mg/m³ (42% Chlorine) and 0.5 mg/m³ (54% Chlorine) averaged over an 8 hour workshift.

NIOSH: The recommended airborne exposure limit is 0.001 mg/m³ averaged over a 10 hour workshift.

- * The above exposure limits are for air levels only. When

- skin contact also occurs, you may be overexposed, even though air levels are less than the limits listed above.
- * Polychlorinated Biphenyls are **PROBABLE CANCER CAUSING AGENTS** in humans. There may be no safe level of exposure to carcinogens, so all contact should be reduced to the lowest possible level.

WAYS OF REDUCING EXPOSURE

- * Where possible, enclose operations and use local exhaust ventilation at the site of chemical release. If local exhaust ventilation or enclosure is not used, respirators should be worn.
- * A regulated, marked area should be established where Polychlorinated Biphenyls are handled, used, or stored as recommended by NIOSH.
- * Wear fullbody protective work clothing.
- * Wash thoroughly immediately after exposure to Polychlorinated Biphenyls and on exit from the work area.
- * Post hazard and warning information in the work area. In addition, as part of an ongoing education and training effort, communicate all information on the health and safety hazards of Polychlorinated Biphenyls to potentially exposed workers.

This Fact Sheet is a summary source of information of all potential and most severe health hazards that may result from exposure. Duration of exposure, concentration of the substance and other factors will affect your susceptibility to any of the potential effects described below.

HEALTH HAZARD INFORMATION

Acute Health Effects

The following acute (short term) health effects may occur immediately or shortly after exposure to Polychlorinated Biphenyls:

- * Exposure to the vapor can irritate the eyes, nose and throat.
- * High exposures can damage the liver.

Chronic Health Effects

The following chronic (long term) health effects can occur at some time after exposure to Polychlorinated Biphenyls and can last for months or years:

Cancer Hazard

- * Polychlorinated Biphenyls are **PROBABLE CARCINOGENS** in humans. There is some limited evidence that they cause skin cancer in humans and they have been shown to cause liver cancer in animals.
- * Many scientists believe there is no safe level of exposure to a **CARCINOGEN**. Such substances may also have the

potential for causing reproductive damage in humans.

Reproductive Hazard

- * Polychlorinated Biphenyls may be TERATOGENS in humans since they have been shown to be teratogens in animals.
- * They may be passed to a child through mother's milk.
- * Polychlorinated Biphenyls can affect the reproductive system of adults.

Other Long Term Effects

- * Repeated exposures can cause liver damage.
- * Polychlorinated Biphenyls can cause a severe acne like rash (chloracne). This may persist for years.
- * High exposures can damage the nervous system, causing numbness, weakness, and tingling ("pins and needles") in the arms and legs.

MEDICAL

Medical Testing

Before beginning employment and at regular times after that, the following are recommended:

- * Liver function tests.
- * Serum triglycerides level.
- * Exam of the skin.

If symptoms develop or overexposure is suspected, the following may be useful:

- * Blood PCB levels.
- * Nerve conduction studies should be considered.

Any evaluation should include a careful history of past and present symptoms with an exam. Medical tests that look for damage already done are not a substitute for controlling exposure.

Request copies of your medical testing. You have a legal right to this information under OSHA 1910.20.

Mixed Exposures

Because more than light alcohol consumption can cause liver damage, drinking alcohol can increase the liver damage caused by Polychlorinated Biphenyls.

WORKPLACE CONTROLS AND PRACTICES

Unless a less toxic chemical can be substituted for a hazardous substance, ENGINEERING CONTROLS are the most effective way of reducing exposure. The best protection is to enclose operations and/or provide local exhaust ventilation at the site of chemical release. Isolating operations can also reduce exposure. Using respirators or

protective equipment is less effective than the controls mentioned above, but is sometimes necessary. in place for highly toxic chemicals or when significant skin, eye, or breathing exposures are possible.

In addition, the following controls are recommended:

- * Where possible, automatically transfer Polychlorinated Biphenyls from drums or other storage containers to process containers.
- * Specific engineering controls are recommended for this chemical by NIOSH. Refer to the NIOSH criteria document: Occupational Exposure to Polychlorinated Biphenyls #77 225.

Good WORK PRACTICES can help to reduce hazardous exposures. The following work practices are recommended:

- * Workers whose clothing has been contaminated by Polychlorinated Biphenyls should change into clean clothing promptly.
- * Do not take contaminated work clothes home. Family members could be exposed.
- * Contaminated work clothes should be laundered by individuals who have been informed of the hazards of exposure to Polychlorinated Biphenyls.
- * If there is the possibility of skin exposure, emergency shower facilities should be provided.
- * On skin contact with Polychlorinated Biphenyls, immediately wash or shower to remove the chemical. At the end of the workshift, wash any areas of the body that may have contacted Polychlorinated Biphenyls, whether or not known skin contact has occurred.
- * Do not eat, smoke, or drink where Polychlorinated Biphenyls are handled, processed, or stored, since the chemicals can be swallowed. Wash hands carefully before eating or smoking.
- * If solid, when vacuuming, a high efficiency particulate absolute (HEPA) filter should be used, not a standard shop vacuum.

PERSONAL PROTECTIVE EQUIPMENT

WORKPLACE CONTROLS ARE BETTER THAN PERSONAL PROTECTIVE EQUIPMENT. However, for some jobs (such as outside work, confined space entry, jobs done only once in a while, or jobs done while workplace controls are being installed), personal protective equipment may be appropriate.

The following recommendations are only guidelines and may not apply to every situation.

Clothing

- * Avoid skin contact with Polychlorinated Biphenyls. Wear protective gloves and clothing. Safety equipment

- suppliers/ manufacturers can provide recommendations on the most protective glove/ clothing material for your operation.
- * All protective clothing (suits, gloves, footwear, headgear) should be clean, available each day, and put on before work.
 - * Viton is recommended as a good protective material.

Eye Protection

- * Eye protection is included in the recommended respiratory protection.

Respiratory Protection

IMPROPER USE OF RESPIRATORS IS DANGEROUS. Such equipment should only be used if the employer has a written program that takes into account workplace conditions, requirements for worker training, respirator fit testing and medical exams, as described in OSHA 1910.134.

- * At any exposure level, use a MSHA/NIOSH approved supplied air respirator with a full facepiece operated in the positive pressure mode or with a full facepiece, hood, or helmet in the continuous flow mode, or use a MSHA/NIOSH approved self contained breathing apparatus with a full facepiece operated in pressure demand or other positive pressure mode.

Common Name: POLYCHLORINATED BIPHENYLS

DOT Number: UN 2315

DOT Emergency Guide code: 15

CAS Number: 1336-36-3

Hazard rating	NJ DOH	NFPA
FLAMMABILITY	Not Found	Not Rated
REACTIVITY	Not Found	Not Rated
CARCINOGEN		

POISONOUS GASES ARE PRODUCED IN FIRE

Hazard Rating Key: 0=minimal; 1=slight; 2=moderate; 3=serious; 4=severe

FIRE HAZARDS

- * Polychlorinated Biphenyls may burn, but do not readily ignite.
- * Use dry chemical, CO2, water spray, or foam extinguishers.
- * POISONOUS GASES ARE PRODUCED IN FIRE, including Dioxin and Chlorinated Dibenzofurans.
- * If employees are expected to fight fires, they must be trained and equipped as stated in OSHA 1910.156.

SPILLS AND EMERGENCIES

If Polychlorinated Biphenyls are spilled or leaked, take the following steps:

- * Restrict persons not wearing protective equipment from area of spill or leak until clean up is complete.
- * Ventilate the area of spill or leak.
- * Absorb liquids in vermiculite, dry sand, earth, or a similar material and deposit in sealed containers.
- * Collect powdered material in the most convenient and safe manner and deposit in sealed containers.
- * It may be necessary to contain and dispose of Polychlorinated Biphenyls as a HAZARDOUS WASTE. Contact your State Environmental Program for specific recommendations.

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FOR LARGE SPILLS AND FIRES immediately call your fire department.

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HANDLING AND STORAGE

- * Prior to working with Polychlorinated Biphenyls you should be trained on their proper handling and storage.
- * Store in tightly closed containers in a cool well ventilated area away from STRONG OXIDIZERS (such as CHLORINE, BROMINE, and FLUORINE).
- * Polychlorinated Biphenyls should be handled only in an established, controlled, regulated area.

FIRST AID

POISON INFORMATION

Eye Contact

- * Immediately flush with large amounts of water for at least 15 minutes, occasionally lifting upper and lower lids.

Skin Contact

- * Quickly remove contaminated clothing. Immediately wash contaminated skin with large amounts of soap and water.

Breathing

- * Remove the person from exposure.
- * Begin rescue breathing if breathing has stopped and CPR if heart action has stopped.
- * Transfer promptly to a medical facility.

PHYSICAL DATA

Flash Point: 383oF (195oC)

Water Solubility: Slightly soluble

Other Names and Formulations

This Fact Sheet can be used for the following substances:

PCB 1242 (Chlorodiphenyl 42% Chlorine)

CAS # 53469 21 9;

PCB 1254 (Chlorodiphenyl 54% Chlorine)

CAS # 11097 69 1.

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NEW JERSEY DEPARTMENT OF HEALTH

Right to Know Program

CN 368, Trenton, NJ 08625 0368

REGION VI NOTIFICATION REPORT FORM

1. Case No.:

2. Reported: (mm/dd/yy) 1-20-90		3. Time: 1640		4. Recorded By: L. J. Roll	
5. <input type="checkbox"/> Through NRC:		6. NRC Case No.:			
A. REPORTER	7. Reported By: Maxilian Reed & Charles Karsveit*				
	8. Organization Name: Houston Health Dept				
	Organization: <input type="checkbox"/> 9. Discharger <input type="checkbox"/> 10. Public <input type="checkbox"/> 11. State <input checked="" type="checkbox"/> 12. Local <input type="checkbox"/> 13. Federal				
	14. Address: 7411 Parkplace Blvd				
B. DISCHARGER	15. City: Houston		16. County:		17. State:
	18. Zip: 77087		19. Phone: (713) 640-4348 x 4399		
	20. <input type="checkbox"/> As Above in A If 9 applies <input type="checkbox"/> 21. Private Company <input type="checkbox"/> 22. Public <input type="checkbox"/> 23. Local <input type="checkbox"/> 24. State <input type="checkbox"/> 25. Federal				
	26. Discharger Name:				
C. INCIDENT LOCATION	27. Address:				
	28. City:		29. County:		30. State:
	31. Zip:		32. Phone: ()		
	33. <input type="checkbox"/> As Above in B 34. Street or Approx. Location: 3508 Ella Blvd; Talk to Property Manager's office				
D. DATE	35. City: Houston		36. County:		37. State: TX
	38. Zip:				
	39. Spill Date: (mm/dd/yy)		40. Spill Time:		
E. MATERIAL	41. <input checked="" type="checkbox"/> Material <input type="checkbox"/> Unknown	42. Material Type: <input checked="" type="checkbox"/> H = Hazardous Material <input type="checkbox"/> X = Other <input type="checkbox"/> O = Oil	CHRIS Code	UN/ DOT No.	CAS No.
	Quantity Released				
	Units (Circle 1) > RQ				
	Material Type (Name):				
F. SOURCE	43. 44. 45. 46. 47. 48. bbl. gal. 49. <input type="checkbox"/>				
	50. 51. 52. 53. 54. 55. bbl. gal. 56. <input type="checkbox"/>				
	57. 58. 59. 60. 61. 62. bbl. gal. 63. <input type="checkbox"/>				
	Source of Spill: <input type="checkbox"/> 64. Highway <input type="checkbox"/> 65. Air Transport <input type="checkbox"/> 66. Railway <input type="checkbox"/> 67. Vessel <input type="checkbox"/> 68. Pipeline <input type="checkbox"/> 69. UST <input type="checkbox"/> 70. Fixed Facility <input type="checkbox"/> 71. Offshore <input type="checkbox"/> 72. Unknown				
G. MED.	73. Vehicle ID or Carrier No.: Abandoned lot with approx 130 drums				
	74. Description:				
H. CAUSE	Medium Affected: <input type="checkbox"/> 75. Air <input type="checkbox"/> 76. Land <input type="checkbox"/> 77. Water <input type="checkbox"/> 78. Groundwater <input type="checkbox"/> 79. Within Facility Only				
	80. Waterway Affected:				
I. DAMAGES	Reported Cause: <input type="checkbox"/> 81. Transportation Accident <input type="checkbox"/> 82. Equipment Failure <input type="checkbox"/> 83. Operational Error <input type="checkbox"/> 84. Natural Phenomenon <input type="checkbox"/> 85. Dumping <input type="checkbox"/> 86. Unknown <input type="checkbox"/> 87. Other				
	88. Description:				
J. ACT-IONS	Damages: 89. No. of Injuries _____ 90. No. of Deaths _____ <input type="checkbox"/> 91. Property Damage > \$50,000				
	92. <input type="checkbox"/> Evacuation 93. Response Action Taken:				
K. NOTIFIED	94. State/Local <input type="checkbox"/> 95. Discharger <input type="checkbox"/> 96. USCG <input type="checkbox"/> 97. Other <input checked="" type="checkbox"/> 98. Unknown				
	99. Agency Name:				
L. COMMENTS	100. Comments: Suspect PCB's; Most drums are not overpacked;				
	101. Comments: Most have signs that say they either do or				
	102. Comments: don't contain PCB's in a building				
	103. Additional Information: <input type="checkbox"/>				
M. RESPONSE & EVALUATION	Responding Agency: S = State L = Local D = Discharger F = Federal E = EPA O = Other U = Unknown				
	104. Agency Name:		107. Responding Agency Code: <input type="checkbox"/>		
	105. Agency Name:		108. Responding Agency Code: <input type="checkbox"/>		
	106. Agency Name:		109. Responding Agency Code: <input type="checkbox"/>		
Region-Specific: M5W_S: <input type="checkbox"/> M5W_P: <input type="checkbox"/> M6T_A: <input type="checkbox"/> M6T_P: <input type="checkbox"/> M6H_HO: <input checked="" type="checkbox"/> M6_TE: <input type="checkbox"/> M6W_E: <input type="checkbox"/> M6_HA: <input type="checkbox"/>					

000051

REGION VI NOTIFICATION REPORT FORM (continued)

M. RESPONSE & EVALUATION (CONTINUED)	110-112. Response Comments :			
	113. Case Status Code: <input type="checkbox"/>			
	(O = Open, C = Closed)			
N. REGION-SPECIFIC	Tributary:			
	<p>Code Definitions: (See Other Side for Elements)</p> <p>M6W_S = (Water Supply) M6T_A = (Radiation) M6H_HO = (RCRA) M6_TE = (Air Enforcement)</p> <p>M6W_P = (NPDES) M6T_P = (Pesticides) M6W_E = (Water Enforcement) M6_HA = (Underground Storage Tanks)</p>			

This image shows a single sheet of white paper with horizontal blue or grey ruling lines. The lines are evenly spaced and run across the width of the page. There is no handwriting or printed text on the paper.

000052

Date: November 21, 1990
From: John Martin
To: Director, ERD and Region 6
Subject: Ella Warehouse Drum, Harris Co., Houston, Texas
POLREP: #1
Site No: ~~N/A~~ 14
NPL Status: non-NPL
Response Authority: CERCLA
Type of Incident: EMERGENCY RESPONSE

SITUATION:

EPA ERB recieved notification on November 20, 1990, from the Houston Health Department of approximately one hundred-thirty (130) drums abandoned in a warehouse. The currently investigating the case. The warehouse is located at 3308-D Ella Boulevard and is a rental space. The drums were discovered by the owner and had apparently been abandoned by the previous tenant. It was reported that most of the drums were labeled "Hazardous Waste D003", "PCB's", "Sodium Metal in Oil", and "Dangerous When Wet". The ERB was requested to respond as soon as possible to evaluate the situation.

STATUS OF ACTIONS:

The OSC and TAT visited the warehouse on 21 November 1990. TAT monitored the interior of the warehouse and around the vicinity of the drums for organic vapors, explosive atmospheres, radionuclides and particulates. No levels above background were noted in any of these areas. The drums were arranged in the corner and appeared to be in fair condition with markings as noted in the previous paragraph. No large leaks or bulging drums were seen although there was a small amount of an unknown powdery substance and dark stains at the base of a few drums.

The warehouse is in a densely populated area with the nearest resident being less than three hundred feet (300') away and a major high school less than one (1) mile away. It is also surrounded by active businesses occupying neighboring warehouse space.

The contents in the drums, assuming that the labeling is complete and correct, may be a serious fire and/or chemical hazard. Metallic sodium violently decomposes water, forming gases which may ignite spontaneously and reacts vigorously with oxygen, burning with an a yellow flame. PCBs emit highly toxic fumes (i.e., furans, dioxins) when heated to decomposition.

NEXT STEPS:

The actions are
The imminent threat posed by the potential hazardous nature of the drummed contents necessitates immediate action to characterize the drum contents, separate/stabilize incompatible drums and profile the contents for proper storage/disposal.

TAT Representative: Heath Esterak
CASE PENDING

ELLA WAREHOUSE DRUMS
Houston, Harris Co., Texas

CLASSICAL EMERGENCY RESPONSE

BACKGROUND

A warehouse space located at 3308-D Ella Boulevard had been rented to a Dr. Harold Rockaway. He had not paid rent since May '90.

Approximately 130 drums were found by the building's owner to be abandoned in the warehouse space.

ERB received notificatin on the Red Phone 11/20/90 from the Houston Health Department. The ing actions.

The OSC and TAT inspected the facility on 11/21/90. Many of the drums were found to be labeled "Hazardous Waste D003", "PCB's", "Sodium Metal in Oil", and "Dangerous When Wet".

THREAT

The drums were arranged in the corner and appeared to be in fair condition. No large leaks or bulging drums were seen although there was a small amount of an unknown powdery substance and dark stains at the base of a few drums.

The warehouse is in a densely populated area with the nearest resident being less than three hundred feet (300') away and a major high school less than one (1) mile away. It is also surrounded by active businesses occupying neighboring warehouse space.

The contents in the drums, assuming that the labeling is complete and correct, may be a serious fire and/or chemical hazard. Metallic sodium violently decomposes water, forming gases which may ignite spontaneously and reacts vigorously with oxygen, burning with an a yellow flame. PCBs emit highly toxic fumes (i.e., furans, dioxins) when heated to decomposition.

PROPOSED ACTION

The imminent threat posed by the potential hazardous nature of the drummed contents necessitates immediate action to characterize the drum contents, separate/stabilize incompatiable drums and profile the contents for proper storage/disposal.

Have ERCS and TAT ready to begin early Friday, 11/30/90. They will cordoned off the immediate building, move ~~a~~ drum to secured area for sampling and haz catting, lable and record pertinent information of each drum and then stage the drums in a safe area according to compatiability.

Compatiable contents will be combine for analysis and then arrange disposal options. If any of the drummed contents are

000001

highly reactive and cannot be safely stored onsite, then disposal arrangements must be rushed.

Before we enter the building. They will need samples for their investigation before they can depart the site. They have made arrangement with the Houston Lab to analyze the reactive samples. They will also provide site security while the operation begins.



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION 6

1445 ROSS AVENUE SUITE 1200

DALLAS TEXAS 75202-2733

NOV 26 1990

MEMORANDUM

FROM: Pat Y. Spillman, Jr. *[Signature]* (6C-WT)
Assistant Regional Counsel

TO: John Martin (6E-EI)
On-Scene Coordinator, Emergency Response Branch

SUBJECT: Ella Warehouse Drums -
Consent For Access To Property Form

Attached is the Consent For Access To Property form for the Ella Warehouse Drums site. This form should be presented to the owner for signature and should be dated by the owner.

Keep a photocopy of the signed form with you while you are conducting the response action at the site. Please return the original to the Superfund Enforcement officer who is assigned to this case, and provide Office of Regional Counsel with a photocopy.

cc: Carl Bolden (6H-EC)

000056

**U.S. Environmental Protection Agency****Office of Toxic Substances****Washington, D.C. 20460****FACSIMILE****PLEASE PRINT IN BLACK INK ONLY****TO:**

Michelle Kelly

OFFICE PHONE:

255 7244

DATE:

11/27/90

ORGANIZATION:

Region VI OTSB

FROM:**CHEMICAL REGULATION BRANCH, TS-798**

___ Joan Blake	382-6236	___ Tony Baney	382-3933
___ Paul Borst	382-6239	___ Lorraine Perry	382-3788
___ Peggy Reynolds	382-3965	___ Janice Canterbury	382-3972
___ Hiroshi Dodochara	382-3959	___ John Smith	382-3964
___ David Hannemann	382-3961	___ Diane Lynne	382-3967
___ Tom Simons	382-3991	___ Winston Lue	382-3962
___ Toni White	382-3933		

Facsimile Number**FTS or (202) 475-7724****Verification Number****FTS or (202) 382-3933****NOTES:**

Dr. Harold Rockaway is principal stockholder of R2P2
(see handwritten notes for details). Jim Robinson is
Chairman of the Board of R2P2,

Mr. Layman's phone could be
couple of years back

(it was a

Please Number Each Page

REQUEST FOR SITE IDENTIFIER APPROVAL

Revised: 05/01/90

DATE: 11-28-90I.D. NO. ASSIGNED: 1 HRequested By: John Martin Mail Code: 6E-ES Phone No: 2275CERCLIS Site Name: Ella Warehouse Drums State T X

CERCLIS I.D. No: _____

CERCLIS Address _____

3308 Ella Blvd.Houston, TxEPA Form 2070-8 Attached Yes ☒ No ☐

COMPLETE EPA FORM 2070-8 IF NO CERCLIS NUMBER ESTABLISHED. (SITE I.D. NUMBER WILL NOT BE ISSUED WITHOUT CERCLIS NUMBER OR EPA FORM 2070-8.)

CIRCLE APPLICABLE PROGRAM(S): Removal - Remedial - Removal/Remedial - Enforcement

THE FOLLOWING ACCOUNT NUMBERS WILL BE ESTABLISHED BASED ON PROGRAM(S) CIRCLED:

FOR FINANCE USE ONLY

	REMOVAL	REMEDIAL	ENFORCEMENT - ALL SITES
AIR	TPX06J8	TPX06J9	TPX06J7
ESD	TFA06M8 TGB06M5	TFA06M9 TGB06M6	TFA06M7 TGB06M4 TGB06MP TFA06MU TGB06MU
HAZARDOUS WASTE	TGB06L5 TFA06L8	TGB06L6 TFA06L9	TFA06L7 TGB06L4 TGB06LP
ORC	TJB06D5 TEY06D5	TJB06D6 TEY06D6	TJB06D4 TEY06D4 TJB06DP
MGMT	TEN06C8	TEN06C9	TEN06C7 TEN06CP
WATER	TPR06K8	TPR06K9	TPR06K7

(Account Identifier) _____

003058

APPROVED YES ☒ No ☐APPROVED BY: Robert Contreras
SUPERFUND FINANCE SECTION CHIEF
OR DESIGNEE

RECORD OF COMMUNICATION		<input type="checkbox"/> PHONE CALL <input type="checkbox"/> DISCUSSION <input type="checkbox"/> FIELD TRIP <input type="checkbox"/> CONFERENCE	
		<input checked="" type="checkbox"/> OTHER (SPECIFY) <u>BRIEFING</u> (Record of item checked above)	
TO: <u>FILE</u>	FROM: <u>John Martin</u>	DATE <u>11-29-90</u>	
		TIME <u>12:15</u>	
SUBJECT <u>Ella Warehouse Drums</u>			
SUMMARY OF COMMUNICATION <u>11-29-90</u> : @ 11:40 A.M. a meeting was held to brief the ESO Division Director (Russell Rhoades) on the drums found at 3308-O Ella Blvd. Based upon the public health threat posed by incompatible materials/wastes found on the drums labeling, Mr. Rhoades authorized \$40,000 to activate ERCS immediately.			
CONCLUSIONS, ACTION TAKEN OR REQUIRED			
INFORMATION COPIES TO:			

000059

CONSENT FOR ACCESS TO PROPERTY

I, Betty Ferguson, hereby consent to officers, employees, and authorized representatives of the United States Environmental Protection Agency (EPA) entering and having continued access to real property, and all improvements thereon, of which I am the owner, located at 3308 Ella Boulevard in the City of Houston, Harris County, Texas.

Continued access is hereby granted for the following purposes:

1. The performance of a response action for the purpose of mitigating the imminent and substantial endangerment to public health and the environment caused by the release or threatened release of hazardous substances, pollutants or contaminants from the property, including, but not limited to, the following actions:
 - a. Removal of drums, containers, equipment, and other materials from the property.
 - b. Use of vehicles, machinery, and other equipment by EPA officers, employees, contractors, and parties authorized by the EPA.
 - c. Other actions necessary to mitigate releases or threatened releases of hazardous substances, pollutants or contaminants from the property.
2. Sampling and testing of any solids, liquids, or other materials stored or disposed of on the property.

I realize that these actions are undertaken by EPA pursuant to its response and enforcement responsibilities under the Comprehensive Environmental, Response, Compensation and Liability Act, as amended, 42 U.S.C. Section 9601 et seq.

This written permission is given by me voluntarily with knowledge of my right to refuse and without threats or promises of any kind.

11-30-90
Date

Betty Ferguson
signature

000060

1 NOV 90 ETX1240SAA ELLA WHSE

30 Spoke to owner of whse.
(BOY HARISTON) about plans
to mobilize tomorrow and
don off area outside of whse.
stage drums outside to get
room for arranging. told
him of our plans to sample,
laycat and overpack drums.
He had no problems. He will
be out of town on the weekend
if emergency

East of warehouse - uninhabited
storage area

West of whse. - woodworking shop
no large amounts of chemicals
in area.

40 Spoke w/ Capt. Barry of
Houston Fire Dept. HAZMAT
(Station #22) 928-6711. briefed
him on our plans for tomorrow.

50 Spoke w/ OSE confirmed will
be on site at 0800.

DD Internal

000061

9

30 NOV 90 ETX1240 SAA ECLA WHS.

1930 OSC and TAT Listerick
speak w/co-owner Betty Ferguson
got access agreement signed
Briefed on situation. We have
their full cooperation.

1945

1000 TAT Safety Meeting

1010 Eric Bernst on site
w/ Reidel Pick Up w/ 4-85 gal
overpacks and 1-55 gal o.p.

1030 Steve Daggett and Mike Stockton
of Houston EPA lab arrive
on site.

100 Houston lab Daggett and
Stockton leave site.

site at 1000.

1130 Forklift arrives on site.

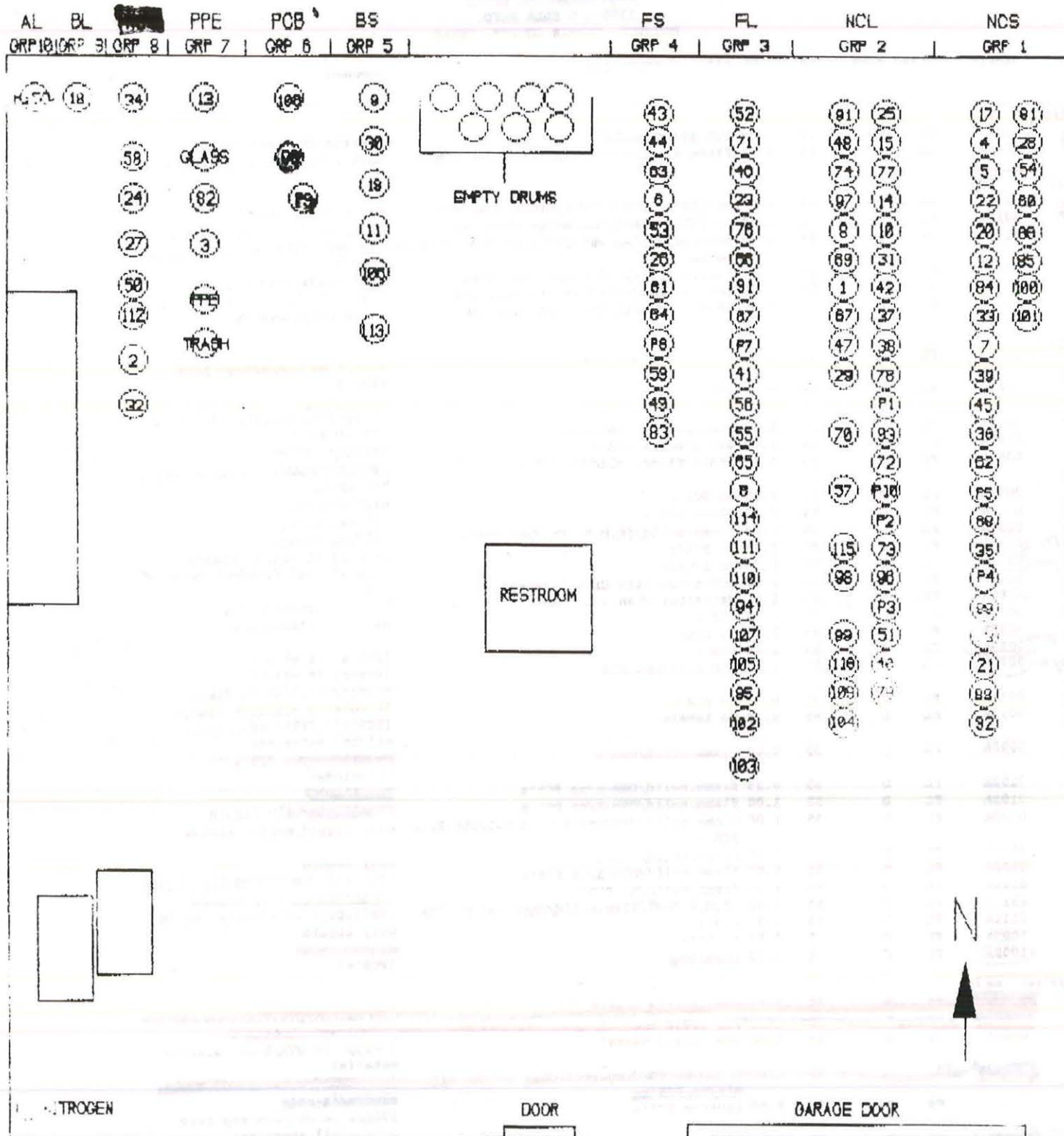
All techs on site w/
materials that arrived on
Fed Ex. Setting up site.

(Hertz Rental - CLARK

150 Breathing air arrives. 8 large
bottles.

JD Listerick

000062



ELLA WAREHOUSE DRUMS

Ecology and Environment, Inc.
Technical Assistance Team

CERCLIS/CASE#:
SOURCE:

TDD#

000003

Page No. 2
12/12/90ELLA WAREHOUSE DRUMS
3308 - O ELLA BLVD.
HOUSTON, HARRIS COUNTY, TEXAS

SAMPLE ID	CLASS	CONT	SIZE	AMOUNT	LABEL INFORMATION	COMMENT
0048B	FS	D	55	0.50	PCB's	[PCB's]/ dark brown solid
0049A	FS	D	55	1.00	ORM-E/dangerous when wet	steel wool
0050A	FS	D	55	1.00	ORM-E/dangerous when wet	disk type filters
0053A	FS	D	55	1.00	dangerous when wet/ORM-E/	disk type filters
0058A	FS	D	55	1.00	ORM-E/dangerous when wet	bottles
0059A	FS	D	55	1.00	PCB's	pps/sand
0061A	FS	D	55	1.00	PCB's/solids	10,000ppm on
0063A	FS	D	55	1.00	PCB's/"solid waste"	OVA/rags/insulation/absorbent
0064A	FS	D	55	1.00	PCB's	30,000ppm on OVA/thick hvy sludge
0083A	FS	D	55	1.00	dangerous when wet/ORM-E	filters/rags
0112A	FS	D	55	1.00	ORM-E/dangerous when wet	white gas/white colored crystals
1006A	FS	C	5	1.00		white gas/white colored crystals

P** NCL

0001A	NCL	D	55	1.00	flam. solid/no PCB's/sodium oil mix	combustible
0008A	NCL	D	55	1.00	PCB's/no PCB's/sodium waste oil	500ppm : y liquid
0016A	NCL	D	55	0.75	PCB's/flamm.solid/sodium Na meta	oily liquid
0029A	NCL	D	55	1.00	flamm.solid/ORM-E/no PCB's	centrifuge
0042A	NCL	D	55	0.75	dangerous when wet/flamm.solid/ORM-E/no PCB's	discharge/lt.oil/hvy sludge
0047B	NCL	D	55	1.00	PCBs/water solvents	discharge/lt oil/thick sludge
0048A	NCL	D	55	0.50	PCBs	[PCB's]
0069A	NCL	D	55	1.00	PCB's/PCB liquid	dark thick oil
0069B	NCL	D	55	1.00	PCBs PCB liquid	
0075A	NCL	D	55	0.25	PCB's	oily water substance
0104A	NCL	D	55	1.00	ORM-E/no PCB's	oily liquid
0109A	NCL	D	55	0.75	dngr.wet/ORM-E/flamm.solid	Na oil mix/Robuck/oily liquid
0115A	NCL	D	55	1.00	flamm.solid/dngr wet/no PCB's/ORM-E	Oily liquid
0116A	NCL	D	55	0.25	flamm.solid/ORM-E/no PCB's	Oily li d
1001A	NCL	C	1	0.25	LIQUINON	
1002A	NCL	C	5	1.00	PCB contaminated	
1003A	NCL	C	5	1.00		split cart + finish/1 gal pail inside 5 gal pail

NON-CHARACTERIZED LIQUID

P** NCS

0004A	NCS	D	55	1.00	danger when wet/ORM-E "no PCB's	sand and charcoal briquettes
0005A	NCS	D	55	1.00	no PCB's/filter bags,cartridges	sand and charcoal briquettes
0007A	NCS	D	55	1.00	no PCB's	12 inch filters
0012A	NCS	D	55	1.00	PCB's/solids	rags,insulation/>50ppm on OVA
0017A	NCS	D	55	1.00	ORM-E/PCB's/dangerous when wet	dark powder/80ppm on OVA
0020A	NCS	D	55	1.00	dangerous when wet/no PCB's/Na sand	rags/filters/insulation/50ppm on OVA
0021A	NCS	D	85	0.50	PCB/solid waste/PCB rags	rags
0022A	NCS	D	55	1.00	PCB/solid waste	rags/small plastic bottles
0028A	NCS	D	55	1.00	dangerous when wet/ORM-E/"solid waste"/no PCB's	1/20ppm on OVA/dark powder/crystals
0033A	NCS	D	55	1.00	PCB's/solid waste	gray powder/rags/leaking bottom bung
0035A	NCS	D	85	1.00	dangerous when wet/solid waste/no PCB's	soluble/charcoal briquets/bags
0036A	NCS	D	55	1.00	PCB's	dark powder
0039A	NCS	D	55	1.00	PCB's/insulation + solids	rags/insulation/sample vials
0045A	NCS	D	30	1.00	ORM-E/flamm.solid/no PCB's/solids,sand rags	air hose/rags/absorbent material
0054A	NCS	D	55	1.00	PCB's	brown sand/general trash
0060A	NCS	D	55	1.00	PCB's (R.M.I. Co.)/flamm.solid	hoses/empty buckets
0062A	NCS	D	55	1.00	dangerous when wet/ORM-E/no PCB's	red lumpy sand/3ppm OVA
0068A	NCS	D	55	0.75	dngrs wet/R.M.I. Co.)/flamm.solid/ORM-E/no PCB's	dark soil like substance (combustible solid)
0081A	NCS	D	55	0.75	dangerous when wet/ORM-E/Na clay	rags and dirt
0084A	NCS	D	55	1.00	PCB's	insulation
0085A	NCS	D	55	1.00	ORM-E/dangerous when wet/no PCB's	sand/clear hose
0086A	NCS	D	55	1.00	dangerous when wet/ORM-E	thick sludge/70ppm OVA
0088A	NCS	D	55	1.00	PCB's	long filters/glass bottles/insulation/30ppm OVA
0089B	NCS	D	55	1.00	no PCBs	

003035

No. 3
12/12/90

ELLA WAREHOUSE DRUMS
3308 - O ELLA BLVD.
HOUSTON, HARRIS COUNTY, TEXAS

SAMPLE ID	CLASS	CONT	SIZE	AMOUNT	LABEL INFORMATION	COMMENT
0092A	NCS	D	55	0.50	PCB's/duPont	sand in drum/visqueen
0100A	NCS	D	85	0.50	no labels	parts + info
0101A	NCS	D	55	0.25	no PCB's	inside/nuts/bolts/pipe trash/robust (hazcat -reactive, pH=5)/"Oil"
1004A	NCS	C	5	0.50	PCBs	"Oil-Dry"/trash
1005A	NCS	C	3	0.50	water/oil	black crystals
1008A	NCS	C	5	0.50	Flamm. Solid/No PCBs	black crystals/rat x 1 rubber bc:
** NFL						
0010A	NFL	D	55	1.00	flamm.solid/ORM-E/no PCB's/centrifuge discharge	oily substance/combustible/100ppm on OVA
0014A	NFL	D	55	0.75	flamm.solid/ORM-E	oily liquid
0015A	NFL	D	55	1.00	no PCB's/ORM-E/flamm.solid	oily liquid/200ppm
0025A	NFL	D	55	1.00	ORM-E/no PCB's/centrifuge solids	combustible/300ppm OVA/slightly water active
0031A	NFL	D	55	1.00	flamm.solid/dangerous when wet/Na oil mix/no PCB's	combustible/200ppm on OVA/liquid/hvy sludge
0037A	NFL	D	85	0.50	PCB's/ORM-E/PCB Na oil mix	30gal liquid
0038A	NFL	D	55	1.00	PCB's	oily liquid
0040A	NFL	D	55	1.00	ORM-E/no PCB's/Na oil mix	oily liquid
0047T	NFL	D	55	1.00	PCBs water solvents	
0048T	NFL	D	55	0.50	PCB's	brown liquid
0051A	NFL	D	55	1.00	PCB's	blackish oil
0057A	NFL	D	55	1.00	PCB's/PCB liquid	oily liquid
0067A	NFL	D	55	1.00	no PCB's	oil/dark sludge
0069T	NFL	D	55	0.00	PCBs PCB liquid	
0072A	NFL	D	55	1.00	PCB's/"liquid waste"	thick dark oil/combustible
0073A	NFL	D	55	1.00	PCB's/"liquid waste"	50ppm on OVA/combustible/thick dark oil
0074A	NFL	D	55	1.00	no PCB's	lt oil/drk sludge bottom
0077A	NFL	D	55	1.00	PCB's waste oil from DOF and MHT	thin oil
0078A	NFL	D	55	1.00	PCB's	thin yellow oil
0079A	NFL	D	55	1.00	no PCB's	thin oil/thick sludge
0089A	NFL	D	55	1.00	no PCB's	dark oil/paper and plastic
0093A	NFL	D	55	1.00	dangerous when wet/no PCB's	lt oil/plastic bags/charcoal/filters/>10ppm OVA
0096A	NFL	D	55	1.00	PCB's/liquid PCB	thin drk oil/combustible
0097A	NFL	D	30	0.75	PCB's	thick oil/paint peeling off drum
0099A	NFL	D	55	1.00	PCB's/PCB liquid	oily liquid
1010A	NFL	C	5	1.00	Chevron machine oil 220	oily combustible liquid, brown to yellow
2UP ** NS						
0003A	NS	D	55	1.00	PCB "glassware"	100ppm OVA [GLASSWARE] NFL
0013A	NS	D	85	0.75	PCB's	[PPE]/trash bags
0082A	NS	D	55	1.00	dangerous when wet/ORM-E/no PCB's	filters [PPE]

NO SAMPLE

000036



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION F

1445 ROSS AVENUE, SUITE 1200
DALLAS, TEXAS 75202-2733

JAN 02 1991

MEMORANDUM

SUBJECT: Consent for Access To Property -
Ella Boulevard site

FROM: Pat Y. Spillman, Jr. *[Signature]*
Office of Regional Counsel (6C-WT)

TO: John Martin
Emergency Response Branch (6E-EI)

I have received a copy of the signed Consent For Access To Property form (form) for the Ella Boulevard warehouse site in Houston, Texas (attached). The form was signed by a Betty Ferguson on November 30, 1990. My understanding is that Roy Hairston is the legal owner of the site at which the response action is being conducted.

I am not aware of Betty Ferguson's relationship to the site. If she is not the legal owner of the site, she is not to sign the form since the form states that the person signing is the owner. A nonowner of the site may sign the form if she or he has been given power of attorney to do so by the property owner. There is no indication that Betty Ferguson has been given such authority to sign this form. It will not suffice that she often signs on behalf of the property owner. She must be given specific authority.

Please inform me as to the status of Betty Ferguson and her relationship to the site owner. If she is not the property owner and has no specific authority to sign on the owner's behalf, the owner's signature will have to be obtained.

cc: Tony Robledo (6H-EC)

Attachment

000007

JAN 10 1961

CONFIDENTIAL DOCUMENT

LOCATED IN A SEPARATE, CONFIDENTIAL FILE



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION 6

1445 ROSS AVENUE SUITE 1200

DALLAS TEXAS 75202-2733

JAN 11 1991

MEMORANDUM

SUBJECT: Legal Description for 3308-O Ella Boulevard
Warehouse Drum Site

FROM: Tony Robledo *TR*
Superfund Enforcement, Cost Recovery Section (6H-EC)

TO: John Martin
Emergency Response Branch (6E-EI)

In agreement with our conversation this morning concerning Ella Boulevard Warehouse Drum Site, you are to request that the TAT team provide a legal site description of the site. The legal site description should be provided to you within seven (7) working days from the date of this memorandum.

Please provide me a copy of the legal description of the site, and inform me of any problems which may occur in regards to the receiving of this document within the timeframe requested.

cc: Bob Werner
Pat Spillman

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UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION 6

HOUSTON BRANCH

10625 FALLSTONE RD.

HOUSTON, TEXAS 77099

MEMORANDUM

DATE: January 11, 1991

SUBJECT: Laboratory Results for Chemical Decontamination Corp.

FROM: Diana G. Ayers, Chief, Houston Branch; 6E-H *Don L. Pyle for*

TO: Charles Gazda, Chief,
Emergency Response Branch; 6E-E

ATTN: John Martin; 6E-EI

Attached are the analytical results for the subject site. Seven samples were received for analysis on December 4, 1990.

This is a final report.

Attachments

cc: Steve Wells; OCI

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000070



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION 6

HOUSTON BRANCH

10625 FALLSTONE RD.

HOUSTON, TEXAS 77099

MEMORANDUM

DATE: January 11, 1991

SUBJECT: Notice of Intent to Dispose of Samples

FROM: Diana G. Ayers, Chief, Houston Branch; *Don L. Payne for* 6E-H

TO: Charles Gazda, Chief,
Emergency Response Branch; 6E-E

The Houston Laboratory is required to dispose of all hazardous wastes we generate in a manner consistent with RCRA regulations. This includes all samples received for analysis provided we find them to contain contaminants which classify them as RCRA hazardous wastes.

I have included this memorandum in the final analytical report to serve as notice to the program that we have completed all analysis. If we have any of the original sample remaining after analysis is complete we will dispose of it within 90 days. Please note that even though original sample may be left over, it does not mean that a reanalysis of the sample may be requested since the sample has most likely exceeded its holding time and any subsequent analysis may not be valid.

If you have a need to hold these samples in custody longer than 90 days, please sign below and return this memorandum to me within the next 30 days. Also, state briefly your need to hold these samples in custody.

Thank you for your cooperation in this request.

CHEMICAL DECONTAMINATION CORP (1AGDEC05)

Facility Name

Program Manager

Date

000071



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 6
HOUSTON BRANCH
10625 FALLSTONE RD.
HOUSTON, TEXAS 77099

MEMORANDUM

DATE: January 7, 1991

SUBJECT: Organic Analysis of Chemical Decontamination Corp.

FROM: Michael Daggett
Chief; Organic Section

TO: Diana Ayers
Chief; Houston Branch

Attached are the organic section analysis reports for samples 1AGDEC05-03 through 1AGDEC05-07. These samples were analyzed for PCBs only.

This is a final report.

000072

PCB ANALYSIS

6ES-HL SAMPLE NO.: 1AGDEC0503 DATE REPORTED: 12/21/90

SAMPLE TYPE: OIL

ANALYST: L.C. MINER, JR.

CAS#		UG/G (PPM)
53469-21-9	PCB-1242	ND DL=< 5.000
11097-69-1	PCB-1254	ND DL=< 5.000
11104-28-2	PCB-1221	ND DL=<10.000
11141-16-5	PCB-1232	ND DL=< 5.000
12672-29-6	PCB-1248	ND DL=< 5.000
11096-82-5	PCB-1260	ND DL=< 5.000
	PCB-1262	ND DL=< 5.000
12674-11-2	PCB-1016	ND DL=< 5.000

ND DL = NOT DETECTED, DETECTION LIMIT

000073

Date: 01/09/91

Appendix I

US ENVIRONMENTAL PROTECTION AGENCY
ENVIRONMENTAL SERVICE DIVISION
HOUSTON LABORATORY SECTION

LAB SAMPLE REPORT

Activity Number: 1AGDEC05 Date Recvd: 12/04/90 Date Collected: 12/03/90
Sample Number: 4 Time Recvd: 07:00 Time Collected: 17:45

Source: CHEMICAL DECONTAMINATION CORP. Tag Number:
Site Description: STA #4 GRAB DRUM 71
Sample Type: OIL
Sample Retention:

Param- Organic: PCB
Metals:
Inorganic:
Biology:

Due Date: 01/01/91
Date Projected: 01/01/91
Date Completed: / /
Comment:
Your Initials: AJ

000074

PCB ANALYSIS

YES-HL SAMPLE NO.: 1AGDEC0504

DATE REPORTED: 12/21/90

SAMPLE TYPE: OIL

ANALYST: L.C. MINER, JR.

```
=====
CAS#                                UG/G (PPM)
53469-21-9      PCB-1242 ----- ND DL=< 20.000
11097-69-1      PCB-1254 -----          150.000
11104-28-2      PCB-1221 ----- ND DL=< 50.000
11141-16-5      PCB-1232 ----- ND DL=< 20.000
12672-29-6      PCB-1248 ----- ND DL=< 20.000
11096-82-5      PCB-1260 ----- ND DL=< 20.000
                  PCB-1262 ----- ND DL=< 20.000
12674-11-2      PCB-1016 ----- ND DL=< 20.000
=====
```

ND DL = NOT DETECTED, DETECTION LIMIT

Date: 01/09/91

Appendix I

US ENVIRONMENTAL PROTECTION AGENCY
ENVIRONMENTAL SERVICE DIVISION
HOUSTON LABORATORY SECTION

LAB SAMPLE REPORT

Activity Number: 1AGDEC05 Date Recvd: 12/04/90 Date Collected: 12/03/90
Sample Number: 5 Time Recvd: 07:00 Time Collected: 17:50

Source: CHEMICAL DECONTAMINATION CORP. Tag Number:
Site Description: STA #5 GRAB DRUM 91
Sample Type: OIL
Sample Retention:

Param- Organic: PCB
Metals:
Inorganic:
Biology:

Due Date: 01/01/91
Date Projected: 01/01/91
Date Completed: / /
Comment:
Your Initials: AJ

000076

PCB ANALYSIS

AES-HL SAMPLE NO.: 1AGDEC0505

DATE REPORTED: 12/21/90

SAMPLE TYPE: OIL

ANALYST: L.C. MINER, JR.

```
=====
CAS#                                UG/G (PPM)
53469-21-9      PCB-1242 ----- 190.000
11097-69-1      PCB-1254 ----- ND DL=< 20.000
11104-28-2      PCB-1221 ----- ND DL=< 50.000
11141-16-5      PCB-1232 ----- ND DL=< 20.000
12672-29-6      PCB-1248 ----- ND DL=< 20.000
11096-82-5      PCB-1260 ----- ND DL=< 20.000
                PCB-1262 ----- ND DL=< 20.000
12674-11-2      PCB-1016 ----- ND DL=< 20.000
=====
```

ND DL = NOT DETECTED, DETECTION LIMIT

Date: 01/09/91

Appendix I

US ENVIRONMENTAL PROTECTION AGENCY
ENVIRONMENTAL SERVICE DIVISION
HOUSTON LABORATORY SECTION

LAB SAMPLE REPORT

Activity Number: 1AGDEC05 Date Recvd: 12/04/90 Date Collected: 12/03/90
Sample Number: 6 Time Recvd: 07:00 Time Collected: 17:55

Source: CHEMICAL DECONTAMINATION CORP. Tag Number:
Site Description: STA #6 GRAB DRUM 90
Sample Type: OIL
Sample Retention:

Param- Organic: PCB
Metals:
Inorganic:
Biology:

Due Date: 01/01/91
Date Projected: 01/01/91
Date Completed: / /
Comment:
Your Initials: AJ

000078

PCB ANALYSIS

RES-HL SAMPLE NO.: 1AGDEC0506 DATE REPORTED: 12/21/90

SAMPLE TYPE: OIL

ANALYST: L.C. MINER, JR.

```
=====
CAS#                                UG/G (PPM)
53469-21-9      PCB-1242 -----          # 22400.000
11097-69-1      PCB-1254 -----          # 9000.000
11104-28-2      PCB-1221 -----        ND DL=< 2500.000
11141-16-5      PCB-1232 -----        ND DL=< 1000.000
12672-29-6      PCB-1248 -----        ND DL=< 1000.000
11096-82-5      PCB-1260 -----        ND DL=< 1000.000
                PCB-1262 -----        ND DL=< 1000.000
12674-11-2      PCB-1016 -----        ND DL=< 1000.000
=====
```

ND DL = NOT DETECTED, DETECTION LIMIT

AVERAGE OF DUPLICATE ANALYSES.

Date: 01/09/91

Appendix I

US ENVIRONMENTAL PROTECTION AGENCY
ENVIRONMENTAL SERVICE DIVISION
HOUSTON LABORATORY SECTION

LAB SAMPLE REPORT

Activity Number: 1AGDEC05 Date Recvd: 12/04/90 Date Collected: 12/03/90
Sample Number: 7 Time Recvd: 07:00 Time Collected: 18:00

Source: CHEMICAL DECONTAMINATION CORP. Tag Number:
Site Description: STA #7 GRAB PAIL 9
Sample Type: OIL
Sample Retention:

Param- Organic: PCB
Metals:
Inorganic:
Biology:

Due Date: 01/01/91
Date Projected: 01/01/91
Date Completed: / /
Comment:
Your Initials: AJ

000030

PCB ANALYSIS

4ES-HL SAMPLE NO.: 1AGDEC0507

DATE REPORTED: 12/21/90

SAMPLE TYPE: OIL

ANALYST: L.C. MINER, JR.

```
=====
CAS#                                UG/G (PPM)
53469-21-9      PCB-1242 ----- ND DL=< 5.000
11097-69-1      PCB-1254 ----- ND DL=< 5.000
11104-28-2      PCB-1221 ----- ND DL=<10.000
11141-16-5      PCB-1232 ----- ND DL=< 5.000
12672-29-6      PCB-1248 ----- ND DL=< 5.000
11096-82-5      PCB-1260 ----- ND DL=< 5.000
                  PCB-1262 ----- ND DL=< 5.000
12674-11-2      PCB-1016 ----- ND DL=< 5.000
=====
```

ND DL = NOT DETECTED, DETECTION LIMIT



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION 6

HOUSTON BRANCH

10625 FALLSTONE RD.

HOUSTON, TEXAS 77099

MEMORANDUM

Date: January 11, 1991

Subject: Laboratory Results for Chemical Decontamination Corp.

From: David C. Stockton, Chief, Inorganic Lab Section, 6E-HI

To: Diana G. Ayers, Chief, Houston Branch, 6E-H

Attached are laboratory results for the subject site. Two (2) drum samples were received on December 4, 1990 to be analyzed for reactivity and sodium.

The laboratory numbers assigned were 1AGDEC0501 and 02.

A portion of samples 1AGDEC0501 and 1AGDEC0502 was introduced into a known amount of DI Water to evaluate the property of reactivity as defined in 40CFR261.23. In both cases the material introduced demonstrated the reactivity characteristic by reacting violently with the DI Water. It was also noted that the pH of the DI Water increased from approximately pH 7 to greater than pH 12. Sodium concentrations of 1250 ppm and 333 ppm were determined by flame AA analysis for samples 1AGDEC0501 and 02 respectively. (See attached results, Test #1)

A known amount of sample 1AGDEC0501 was introduced into a known amount of DI Water and subsequently analyzed for sodium by flame AA analysis. Calculations were made from the known weights of the materials introduced and from the concentration of sodium in the DI Water. It was determined that the composition of the material introduced and recovered contained approximately 87% sodium. (See attached results, Test #2)

This is a final report.

Attachments (2)

000032

Date: 01/09/91

Appendix I

US ENVIRONMENTAL PROTECTION AGENCY
ENVIRONMENTAL SERVICE DIVISION
HOUSTON LABORATORY SECTION

LAB SAMPLE REPORT

Activity Number: 1AGDEC05 Date Recvd: 12/04/90 Date Collected: 12/03/90
Sample Number: 1 Time Recvd: 07:00 Time Collected: 17:30

Source: CHEMICAL DECONTAMINATION CORP. Tag Number:
Site Description: STA #1 GRAB DRUM 32
Sample Type: SOLID
Sample Retention:

Param- Organic:
Metals: M##
Inorganic: SRE
Biology:

Due Date: 01/01/91
Date Projected: 01/01/91
Date Completed: / /
Comment:
Your Initials: AJ

000033

ATTACHMENTS

US EPA HOUSTON BRANCH

SAMPLE #:	1AGDEC05-01	DATE	
SOURCE:	CHEM DECON CORP	RECEIVED:	04-Dec-90
TYPE:	SOLID CHUNK IN OIL	DATE	
ANALYSTS:	TAS	REPORTED:	11-Jan-91

TEST #1: REACTIVITY, pH CHANGE: SUBSTANCE REACTED VIOLENTLY
 IN WATER

PH WENT FROM 7 TO >13

ANALYSIS OF 100 ML SAMPLE FROM REACTIVITY
TEST YIELDED 1250 PPM SODIUM

TEST #2: ASSAY OF SOLID PORTION: 870 MG/G (87%) SODIUM

Date: 01/09/91

Appendix I

US ENVIRONMENTAL PROTECTION AGENCY
ENVIRONMENTAL SERVICE DIVISION
HOUSTON LABORATORY SECTION

LAB SAMPLE REPORT

Activity Number: 1AGDEC05 Date Recvd: 12/04/90 Date Collected: 12/03/90
Sample Number: 2 Time Recvd: 07:00 Time Collected: 17:35

Source: CHEMICAL DECONTAMINATION CORP. Tag Number:
Site Description: STA #2 GRAB DRUM 27
Sample Type: SOLID
Sample Retention:

Param- Organic:
Metals: M##
Inorganic: SRE
Biology:

Due Date: 01/01/91
Date Projected: 01/01/91
Date Completed: / /
Comment:
Your Initials: AJ

000035

US EPA HOUSTON BRANCH

SAMPLE #:	1AGDEC05-02	DATE	
SOURCE:	CHEM DECON CORP	RECEIVED:	04-Dec-90
TYPE:	SOLID SUSP IN OIL	DATE	
ANALYSTS:	TAS	REPORTED:	11-Jan-91

TEST #1: REACTIVITY, pH CHANGE: SUBSTANCE REACTED VIOLENTLY
IN WATER

pH WENT FROM 7 TO >12

ANALYSIS OF 100 ML AQUEOUS SAMPLE FROM REACTIVITY
TEST YIELDED 333 PPM SODIUM

Date: 01/09/91

Appendix I

US ENVIRONMENTAL PROTECTION AGENCY
ENVIRONMENTAL SERVICE DIVISION
HOUSTON LABORATORY SECTION

LAB SAMPLE REPORT

Activity Number: 1AGDEC05 Date Recvd: 12/04/90 Date Collected: 12/03/90
Sample Number: 3 Time Recvd: 07:00 Time Collected: 17:40

Source: CHEMICAL DECONTAMINATION CORP. Tag Number:
Site Description: STA #3 GRAB DRUM 70
Sample Type: OIL
Sample Retention:

Param- Organic: PCB
Metals:
Inorganic:
Biology:

Due Date: 01/01/91
Date Projected: 01/01/91
Date Completed: / /
Comment:
Your Initials: AJ

003007

CONFIDENTIAL DOCUMENT

LOCATED IN A SEPARATE, CONFIDENTIAL FILE

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(713) 479-5295
Fax: (713) 479-6358

1660 South Beltline Hwy.
Mobile, AL 36693
(205) 666-3500
Fax: (205) 666-3595

209 Factory Street
Jackson, MS 39202
(601) 948-2123
Fax: (601) 948-2126



RIEDEL-PETERSON ENVIRONMENTAL SERVICES

Mobile Alabama 36693
February 6, 1991

John Martin, OSC
U.S. Environmental Protection Agency
1445 Ross Avenue (6E-ES)
Dallas, Texas 75202-2733

Dear Mr. Martin:

Enclosed is our Standard Operating Procedures for Hazardous Catagorization of materials on the Ella Drum site. The full haz-cat procedure was used as outlined on pages 95 and 96. Dexsil Chlorine Halogen PCB Clor-N-Oil 0-50ppm test kits were used for screening oils found on site as positive or negative for PCB's.

Sincerely,

LeRoy Cassidey
Technical Services Director

Hazardous Materials Identification in the Field

Matthew Monsees

U.S. Environmental Protection Agency, Region 9
San Francisco, California

Steven P. Wolfe

Tetra Tech, Inc.
San Francisco, California

ABSTRACT

The following characteristics must be determined if a waste is considered hazardous according to 40 CFR, Part 261: Ignitibility, Corrosivity, Reactivity and EP Toxicity. These characteristics can be qualitatively and semi-quantitatively analyzed by a Hazardous Categorization (Hazcat) procedure used by the Emergency Response Section of the U.S. EPA and its Technical Assistance Team.

The procedure consists of three stages, each of which has a specific function. Stage One defines the physical and chemical characteristics of a hazardous waste. Stage Two confirms substances found in Stage One. Elaborate instrumentation quantifies the substances found and also aids in defining the ignitibility, corrosivity and reactivity of hazardous waste. Stage Three serves as further confirmation for the identification made in Stages One and Two. Laboratory analyses are employed for the confirmations and for precise quantification.

The Hazcat procedure permits the classification of hazardous waste according to RCRA and DOT criteria.

INTRODUCTION

The Region 9 U.S. EPA Emergency Response Section (USEPA-ERS) and its Technical Assistance Team (TAT) currently provide a broad range of analytical field test capabilities for the hazardous categorization of unknown chemicals. These capabilities assist in the hazardous classification of a waste under RCRA criteria.

A waste is considered hazardous if: (1) it is or contains a waste included in 40 CFR, Part 261; or (2) it demonstrates one or more of the following characteristics: Ignitibility, Corrosivity, Reactivity or EP Toxicity. A substance also is considered hazardous if it is capable of causing environmental or health damage if disposed improperly. Finding chemicals in the waste that persist in the environment, that are very mobile, that bioaccumulate and that are concentrated in organisms are among the most important criteria for determining the potential environmental and health risks of a waste material.

Field results obtained with the Hazcat procedure allow the categorization of hazardous substances into a variety of hazard classes. These classes are subgroups of the above four RCRA characteristics of hazardous waste; the analysis also allows one to select the proper shipping classes to meet Department of Transportation (DOT) specifications. Typically, these categories are flammables, oxidizers, corrosives and poisons. The categories most commonly encountered in the field are given in Appendix II.

In order to characterize an unknown hazardous waste according to 40 CFR, Part 261, and subsequently transport a hazardous material according to DOT specifications outlined in 49 CFR, Part 172, the characteristics mentioned above must be assessed. The hazardous categorization procedure (Hazcat) of unknowns

employed by the USEPA-ERS and TAT are divided into three stages, each of which classifies hazardous material in a different manner according to RCRA (included in Appendix I is a hazardous categorization procedure used by U.S. EPA Region 9). Each stage is outlined and discussed below.

HAZARDOUS MATERIAL CATEGORIZATION

Stage One

Initially, chemical and physical properties of an unknown are analyzed and matched with the appropriate RCRA definitions of hazardous waste which, as mentioned above, are ignitibility, corrosivity, reactivity and EP toxicity. Discussed below is the procedure for assessing the hazardous nature of unknown samples.

Observation of Sample

Initially, the physical characteristics are observed and noted. Important features to include are the physical state of the sample (solid, liquid or gas), color, viscosity and solubility in water, transparency, homogeneity, number of phases present and specific gravity.

The specific gravity of samples is measured in two ways in the field. When precise data are not needed, a quick screen for specific gravity relative to water is made. The procedure is outlined in Appendix I. When a precise specific gravity is needed, U.S. EPA Region 9 uses a set of eight hydrometers graduated in the specific gravity system covering the scale from specific gravity 0.700 to 2.000 g/cm³. The specific gravity of a sample is measured to aid in the estimation of chlorinated hydrocarbon content. In the case of relatively concentrated samples of suspected acids or bases, it can be used to identify the type or concentration of an acid or base.

FIELD TESTS PERFORMED TO DETERMINE THE GENERAL CLASSES OF CHEMICALS

Corrosivity

The corrosivity of a sample is determined in the field by measuring its pH. RCRA guidelines state that a substance is corrosive if it has a pH less than 2 or greater than 12.5. The pH is determined using either a pH meter or pH indicator strips (paper).

Ignitibility

There are two means of identifying whether or not a sample is ignitable: (1) if it has a closed-cup flash point (FP) less than 140°F, or (2) if the material is an oxidizer. The flash point can be determined in the field with a closed-cup SETA flash kit or can be estimated using a combination of three other methods. Ordinarily, the U.S. EPA Region 9 uses the SETA flash for determining the precise flash point of a sample which has been composited from a group of compatible subsamples.

Since using the SETA flash point kit is fairly time-consuming, other quicker but less quantitative methods for estimating the flash

point of an unknown hazardous waste has been developed. The flash point of a sample initially is estimated using a combination of three techniques: (1) a photoionizer head space determination of detectable organics vapors is made; (2) then a combustible gas indicator is used to measure presence of combustible vapors in a sample; (3) finally, an aliquot of the sample is subjected to a flame.

A flammability determination scheme has been developed using the data generated from these three measurements to estimate whether a sample is flammable ($FP < 100^\circ F$), combustible ($100 < FP < 200^\circ F$) or non-flammable ($FP > 200^\circ F$). This scheme is outlined in step 10 of the Hazcat procedure shown in Appendix I.

When all sample field flash point analyses are complete, a composite sample is made from compatible samples and a precise determination of the composite flash point is made using the SETA flash kit.

The other RCRA criterion for ignitability is a confirmation of presence of oxidizing capacity of an unknown hazardous waste. The U.S. EPA Region 9 employs two methods to determine the presence of oxidizers within a hazardous waste sample. In the first test, KI starch paper, wetted with HCl, is inserted into a sample-water solution. The strip of paper darkens to brown or purple in the presence of an oxidizer due to the release of iodine:



Another method of assessing the oxidizing characteristics of a sample includes analysis of the oxidation-reduction (REDOX) potential. A standard test solution of $\text{Fe}(\text{NH}_4)_2(\text{SO}_4)_2$ is prepared. The oxidation potential of an unknown can be determined upon the addition of 5 ml of oxidizing agent to 50 ml of sample. A 50 mv increase in the oxidation potential indicates the presence of an oxidizing material. Conversely, a 50 mv decrease in oxidation potential is indicative of a reducing substance when using a K_2CrO_4 standard.

Reactivity

The characteristic of reactivity, as partially defined in the RCRA Regulations, 40 CFR, Part 261, is indicated if a sample of the waste has either of the following properties: (1) reacts violently with water; or (2) is a cyanide or sulfide bearing waste which, when exposed to pH conditions between 2 and 12.5 (Fig. 1), can generate toxic gases, vapors or fumes in a quantity sufficient to present a danger to human health or the environment.

A sample is tested initially for water reactivity by slowly adding equal parts of the sample to water and recording the temperature change; the physical appearance of the sample is also watched, especially for any possible reaction such as intense effervescence.

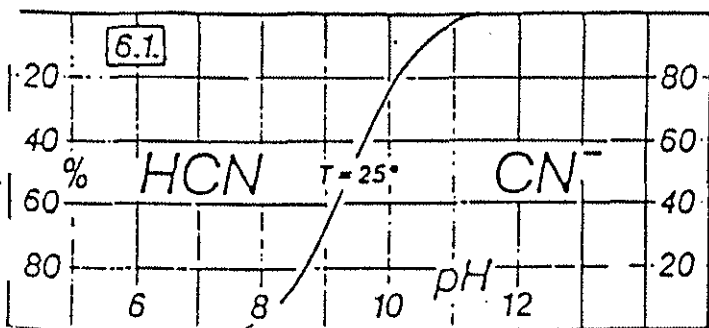
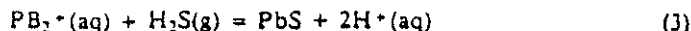


Figure 1

Illustration of cyanide species' dependency on pH. At 25° , below a pH of 9.5, HCN is the prevailing species. At pH values greater than 9.5, the ionic form CN^- is the prevailing species.

Following determination of the pH, sulfides or cyanides are tested for. A qualitative test for the presence of sulfides is conducted if the pH is 9 or greater. In this pH range, sulfides exist in the ionic form. Below a pH of 9, H_2S gas is the prevailing sulfide species, at 25°C . The following reactions demonstrate the result of adding water and HCl to lead acetate starch paper in the presence of sulfur:



HCl is added until the pH = 4 or less, thereby freeing sulfides from the sample. Production of H_2S gas will occur and be incorporated into the lead acetate on the starch paper as indicated by a darkened test strip.

A test for the presence of cyanide also is performed if the pH is greater than or equal to 9. Like sulfides, at these pH values, cyanides exist in the ionic form: CN^- (Fig. 1). At pH values less than 9, cyanides exist as HCN, at 25° .

The first test involves adding NaOH to the sample until the pH is 11 or greater. This pH ensures that the cyanide will be in its ionic form. Three to five drops of 0.192 N AgNO_3 are then added to the solution. If no color change is apparent, cyanide is present. If it is not present, an AgCl_2 precipitate will form.

A second, colorimetric, quantitative cyanide test capable of detecting cyanide concentrations from 0.03 to 0.7 mg/l is available, although it requires approximately 5 minutes per sample. Upon addition of chlorine, cyanide will form a cyanogen chloride. This compound then reacts with pyridine to form a glucutone dialdehyde which condenses with 1,3-dimethyl barbituric acid to form a violet dye. The intensity of the violet color is indicative of the cyanide content.

There are semi-quantitative field methods for HCN and H_2S detection that use Draeger tubes. HCN levels from 2 to 30 ppm can be measured by drawing an air sample using a manual bellows pump through a filter containing HgCl_2 . Colorimetric changes of a methyl red indicator reagent measure the HCN concentration. The relative standard deviation for this method is 10-15%.

H_2S concentrations from 0.1 to 3 ppm also can be measured using Draeger tubes. A lead carrier agent creates a lead sulfide compound; H_2S is detected on the colorimetric graduated tube. The relative standard deviation is 10-15%.

Poisonous Substances

Poisonous substances, specifically chlorinated hydrocarbons, are detected using a sample field technique. All samples which are insoluble in water and have a specific gravity greater than 1 or that exhibit any detectable combustibility measurements on a Combustible Gas Indicator (CGI) are tested for the presence of chlorinated hydrocarbons with the Beilstein Test (see Step 10 of the Hazcat procedure in Appendix I).

To begin this test, a copper wire is decontaminated in a propane flame. After cooling, the wire is dipped into the sample and then burned again. A bright green flame indicates that the chloride ion has been ionized and is therefore present in the sample. Although in reality this is only a qualitative test, the detection limit is estimated to be approximately 500 mg/l.

When dealing with samples which are known to be transformer oils or have been contaminated with transformer oils, the U.S. EPA employs two methods for testing for PCBs. A colorimetric test available for determining PCB presence is manufactured by the Dexsil Chemical Corporation. Kits are available that measure chlorinated hydrocarbons from 0-50 and 0-500 mg/l.

Initially, a catalyst is mixed thoroughly with a precise volume of oil. A metallic sodium reagent then is added to strip the chloride ion from the hydrocarbon and form NaCl. A buffer solution is added next to extract the NaCl, which is then separated and added to

203-248-3509

a colorimetric reagent. The concentration of chlorinated hydrocarbons in the sample determines the color of the resulting solution.

A more elaborate and time-consuming PCB field test kit can be used to measure PCB content of transformer oil or soils known to be contaminated with transformer oil. The detection limit with this technique is approximately 10 mg/l and the standard deviation is about 1%. In this method, chloride ions are stripped from the sample with a sodium biphenyl reagent and extracted into an aqueous phase. The chloride content then is measured (Table 1) with a previously calibrated specific ion electrode probe.

Table 1

Equivalency table illustrating chloride electron probe response and PCB content. Note that an accurate probe response is more important for accurate results below roughly 15 mg/l PCB.

Probe Response (mV)	PCB Conc. as 1242 (mg/l)	Probe Response (mV)	PCB Conc. as 1242 (mg/l)	Probe Response (mV)	PCB Conc. as 1242 (mg/l)	Probe Response (mV)	PCB Conc. as 1242 (mg/l)
130	9	90	45	32	215	16	942
128	10	88	49	30	234	14	1022
126	10	86	54	28	254	12	1110
124	11	84	58	26	275	10	1205
122	12	82	63	24	299	8	1308
120	13	80	68	22	324	6	1420
118	14	78	74	20	352	4	1540
116	16	76	81	18	382	2	1672
114	17	74	87	16	415	0	1815
112	18	72	93	14	450		
110	20	70	103	12	489		
108	22	68	112	10	531		
106	23	66	121	8	576		
104	25	64	132	6	625		
102	28	62	143	4	679		
100	30	60	155	2	734		
98	33	58	168	0	800		
96	36	56	183		868		
94	39	54	198				
92	42						

Stage Two

The second stage of characterization uses additional methods to detect the presence of chemicals listed as RCRA wastes in 40 CFR, Part 261. These methods also are used to confirm if the samples are ignitable, corrosive, reactive or poisonous.

The use of a portable gas chromatograph permits a chemist to determine the concentrations of 33 organic compounds shown in Table 2. The analysis begins with a gas sample being drawn into the probe. Then, the chromatograph column temperature is measured and used to calculate an expected retention time period for each gas. If a generated peak falls within this calculated retention time period, it is first qualitatively identified by the operator and then quantified by the internal microprocessor. Each analysis takes approximately 3 min.

Hazardous categorization capabilities also include screening for some metals, shown in Table 3, using colorimetric detection strips. The ERS section is currently in the process of acquiring a portable x-ray fluorescence analyzer to provide the capability of measuring the Title 22 toxic metals listed in Table 4. A powder/liquid sample probe with a radioisotopic source will permit us to analyze hazardous wastes typically encountered in the field. A brief description of the x-ray fluorescence analysis technique follows.

X-ray fluorescence analysis is based on the measurement of the wavelength and intensity of the characteristic x-ray emitted by a sample which has been excited by electrons, photons or ions.

Table 2
Gas Capable of Being Analyzed by the Portable Micromonitor Gas Chromatograph

Hydrogen cyanide	Methylene chloride
n-butyl mercaptan	Trichloroethylene
Hexane	Carbon tetrachloride
Heptane	1,1,1, trichloroethane
Iso-octane	Perchloroethylene
Benzene	1,2 dichloropropane
Toluene	Acetone
Cyclohexane	Methylethyl ketone
Styrene	Ethyl ether
o-xylene	Methanol
p-xylene	Ethanol
m-xylene	Ethyl acetate
Ethylbenzene	Isopropanol
Methylisobutyl ketone	Ethylene oxide
Chloroform	Acrolein
Tetrahydrofuran	Isoamylacetate
n-butanol	

Table 3
Metals and Acid Salts Capable of Being Detected with Detection Strips

Copper	Sulfate
Chromium	Nitrate
Tin	
Silver	
Arsenic	

Generation of characteristic x-rays requires two steps: first an atom must be ionized by removing one of its inner electrons; this reaction can be accomplished by bombarding the atom with high energy electrons, ions or photons. Next, the missing electron must be replaced by one of the outer electrons. It is the replacement process which causes emission of a characteristic x-ray photon.

The x-ray fluorescent instrument will be used to determine the presence of California Health and Safety Code Title 22 Compounds. California places a restriction on disposal of certain metals in liquid samples if their concentration exceeds given limits. The restricted metals and the concentration limits are given in Table 4.

Table 4
Title 22 Metals and Their Respective Critical Concentration Limits

Metal	Concentration (mg/l)
Arsenic and compounds (as As)	500
Cadmium and compounds (as Cd)	100
Chromium VI and compounds (as Cr VI)	500
Lead and compounds (as Pb)	500
Mercury and compounds (as Hg)	20
Nickel and compounds (as Ni)	138
Selenium and compounds (as Se)	100
Silver and compounds (as Ag)	500
Thorium and compounds (as Th)	130

The sample is considered to be combustible if:

- (1) The CGI reading is between 0-1% and
- (2) The HNU reading is between 50-200 ppm and
- (3) The BIC test is (+/-)

The sample is considered to be non-flammable, non-combustible

if:

- (1) The CGI reading is 0% and
- (2) The HNU reading is less than 50 ppm and
- (3) The BIC test is (-)

BIC test:

- (+) Flammable, ignites readily and voraciously upon exposure to a flame source, estimated flash point less than 100°F
- (+/-) Combustible, will eventually ignite and sustain a flame source, flash point estimated to be less than 200°F
- (-) Nonflammable and noncombustible, does not ignite or sustain flame, flash point estimated to be greater than 200°F.

Solid Samples

Add 1g of sample to 10 ml water and follow liquid sample procedures.

APPENDIX II FIELD HAZARD CLASSIFICATION ACCORDING TO DOT SPECIFICATION Field Hazard Classification

Field Code	Physical State	Hazard Classification	Hazard Results*
C1	L	Flammable liquid	Passes flammable test
C2	L	Combustible liquids	Passes combustible test
C3	S	Flammable solid	Passes flammable test
C4	S/L	Oxidizers	Passes oxidizer test
C5	S/L	Corrosive, basic	Passes corrosive test, pH > 12.5
C6	S/L	Corrosive, acidic	Passes corrosive test, pH < 2
C7	S/L	Poison (chlorinated hydrocarbons)	Passes chlorinated hydrocarbon test
C8	S/L	Poison (cyanide)	Passes cyanide test
C9	S/L	Poison (sulfide)	Passes sulfide test
C10	S/L	Not otherwise specified	Nonflammable, non-combustible, with no CHC, cyanide, or sulfides present, nonoxidizing and pH between 2 and 12.5

*See appropriate step in Appendix I.

NOTE: L = Liquid; S = Solid.

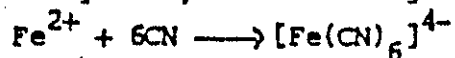
1.0 Scope and Application

- 1.1 This method is applicable to the determination of cyanide in domestic and industrial wastes.
- 1.2 This method can detect the presence of free and many complexed cyanide using this method.
- 1.3 It is not possible to determine the type or concentration of cyanide using this method.

2.0 Summary of method

- 2.1 The sample is made alkaline to pH 12 with NaOH and solutions of ferrous sulfate and ferric chloride are added. Concentrated sulfuric acid is added and if the sample contains any cyanide, the ferrous sulfate and the ferric chloride react with the cyanide to produce a deep blue color known as Prussian Blue.

- 2.1.1 When a solution of an iron (II) salt is added to an excess of cyanide, the following is formed:



The complex hexacyanoferrate (II) ion is so stable that it gives none of the common qualitative tests for either the iron (II) or the cyanide ions. Iron (III) ions react with hexacyanoferrate (II) ions to form Prussian blue. The precipitate has the approximate composition $\text{KFe}[\text{Fe}(\text{CN})_6] \cdot \text{H}_2\text{O}$ and has a deep blue color. Three independent experimental methods have shown the ion outside the coordination sphere to have the oxidation state of +3, and that inside the coordination sphere to have +2.

When the hexacyanoferrate (II) ion is oxidized by chlorine the hexacyanoferrate (III) $[\text{Fe}(\text{CN})_6]^{3-}$ (also called ferricyanide), is produced.



The addition of iron (II) ions to hexacyanoferrate (III) solutions yields a blue precipitate known as Turnbull's blue, having the same approximate composition $\text{KFe}[\text{Fe}(\text{CN})_6] \cdot \text{H}_2\text{O}$ and same deep blue color as that of Prussian blue.

6.0 Quality Control

6.1 Run a blank and a 50 ppm standard with each batch.

6.2 Also run a duplicate and spike for every tenth sample.

6.3 Spike samples that are both aqueous and high in pH, as discussed in 3.1.

General Chemistry, 5th Edition, 1976 Nebergall, Schmidt and Holtzclau, pg. 954, Complex Cyanides of Iron.

HAZCAT PROCEDURES

1) Physical Nature:

- a) color
- b) viscosity
- c) opacity or transparency
- d) homogeneity (of uniform structure or composition)
- e) turbidity (not clear or translucent but clouded)
- f) phasality (liquid to liquid or liquid to solid ratio)

2) Specific Gravity (N_D):

Slowly add water to sample

If sample sinks N_D smaller than 1

If sample floats N_D greater than 1

3) Reactivity:

Slowly add water. If intense heat is generated, sample is considered H_2O /reactive.

4) Solubility:

Slowly add water to sample and note any one of the following.

- a) soluble or miscible:
- b) slightly soluble:
- c) suspension:
- d) insoluble:

5) pH

Dip pH paper in solution and read pH from scale on the paper.

6) Oxidizer

Insert a strip of Hcl wetted KI starch paper into sample. If paper turns anywhere from light-brown to purple oxidizing material is likely present.

7) Cyanide

- a) weigh 20g of sample in beaker
- b) add enough 2.5 NaOH to bring pH to 12
- c) add 10ml of 10% Ferrous Sulfate and mix
- d) add 10ml of 5% Ferric Chloride and mix
- e) very carefully, add enough conc. Sulfuric acid to bring pH less than or equal to 1.0

8) Chlorinated Hydrocarbon

- a) heat copper wire until yellow flame with no green appears
- b) cool wire (10-15 sec.)
- c) dip wire into sample solution
- d) insert sample coated wire in flame
- e) a green flame indicates chlorinated compounds

95

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- 9) Sulfide - when pH is greater than 10
- a) wet Lead Acetate paper with water
 - b) adjust pH of sample to less than or equal to 4 with HCl
 - c) hold paper over air space of sample solution
 - d) if paper darkens, presence of Sulfides

10) Flammability/Combustibility

Three measurement methods assist

- a) HNU Photoionizer
- b) CGI Meter
- c) SETA Flash

The sample is considered flammable if:

- 1) SETA flash is less than 100°F
- 2) CGI reading is greater than 1%
- 3) HNU reading is greater than 200ppm

The sample is considered combustible if:

- 4) CGI reading is between 0-1%
- 5) HNU reading is between 5-100ppm

The sample is non-flammable, non-combustible if:

- 6) CGI reading is 0%
- 7) HNU is less than 50ppm

96

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HAZCAT PROCEDURE

Describe physical nature of sample

- 1) color
- 2) viscosity
- 3) opacity
- 4) homogeneity
- 5) turbidity
- 6) phase

Determine specific gravity

Determine reactivity of sample with water

Determine solubility of sample

Determine pH of sample

if less than 9

Determine if oxidizers are present

if greater than 9

Determine if cyanides are present

Determine if sulfides are present

Determine the flammability

97

000038

HAZCAT REAGENTS AND EQUIPMENT

1 Liter Beaker x 2
50 ml Beaker x 5
60 ml Amber jar with Dropper
50 ml Specimen jars
Clear Tubes (Plastic, glass pipets)
Deionized Water
pH paper
Hcl conc. 2N
KI starch paper
2.5N NaOH
Ferrous Sulfate 500g
Ferric Chloride 100g
 H_2SO_4 conc. 10N
Copper Wire
Lead acetate paper
HNU Photoionizer
Seta Flash (See attached manual)
Propane Torch
Thermometer
Dysil Chemical Corp. Kit for PCB's (see attached sheets)
0.192 N $AgNO_3$ solution (EPA "CN test")
Acetone solution of p-dimethylaminobenzal Rhodamine
(EPA "CN test")

Note: Contents of Haz-Cat Kit must adhere to DOT shipping regulations.

Haz-Cat Kit container should insure that contents cannot be broken or mixed (i.e., packed with foam, metal box)

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HAZARD CLASS & DATA GLOSSARY

Class
Code Hazard Class Description

Data Glossary

AL Acid Liquid
AOL Acid Oxidizing Liquid
AOS Acid Oxidizing Solid
AS Acid Solid
BL Base Liquid
BOL Base Oxidizing Liquid
BOS Base Oxidizing Solid
BS Base Solid
CLG Chlorinated Gas
CLL Chlorinated Liquid
CNG Cyanide Gas
CNL Cyanide Liquid
CNS Cyanide Solid
FG Flammable Gas
FL Flammable Liquid
FS Flammable Solid
NCG Non Characteristic Gas
NCL Non Characteristic Liquid
NCS Non Characteristic Solid
NFL Non-Flammable Liquid/Oil
NS No Sample Taken
OG Oxidizing Gas
OL Oxidizing Liquid
OS Oxidizing Solid
SG Sulfide Gas
SL Sulfide Liquid
SS Sulfide Solid

SAMPLE ID NO. : A = All the material
T = Top portion
B = Bottom portion
CONTAINER TYPE : V = Vat
D = Drum
C = Container less than 55 gall.
SIZE : Size of container in gallons
AMOUNT : 1.00 = Full
0.75 = 3/4 Full
0.00 = Empty
(material that G = Glass
the container P = Poly
is made of) F = Fiber
CONTAINER COND.: P = Poor
F = Fair
G = Good
CONTAINER TOP : O = Open
B = Bung
MATRIX : S = Solid
CONTAINER MAT.: S = Steel
L = Liquid
G = Gas
SOLUBLE : Y = Soluble in water
L = Floats in water
G = Heavier than water
PH = 15 if material is insoluble in water such
that soluble = L or G

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Classification of a Material Having More Than One Hazard
As Defined in Title 49

Hazard Number	Description
1	Radioactive material (except a limited quantity).
2	Poison A.
3	Flammable gas.
4	Non-flammable gas.
5	Flammable liquid.
6	Oxidizer.
7	Flammable solid.
8	Corrosive material (liquid).
9	Poison B.
10	Corrosive material (solid).
11	Irritating materials.
12	Combustible liquid (in containers having capacities > 110 g)
13	ORM-B.
14	ORM-A.
15	Combustible liquid (in containers having capacities <=110 g)
16	ORM-E.

000101

Hazard Data - Sample Comments - By Hazard Class

Sample ID	Sample Taken?	Hazard Class	Label/Comment	Action Taken
** Samples for Hazard Class : BL				
00027	.T.	BL	PCB's/solid waste" plastic qt. bottles	
0018A	.T.	BL	flamm.solid/ORM-E/centrifuge/no PCB's dark liquid/water reactive	
** Samples for Hazard Class : BS				
0009A	.T.	BS	no PCB's/ ORM-E/ dangerous when wet bag type filters	
0011A	.T.	BS	no PCB's/ORM-E/dangerous when wet bag type filters/corrosive	
0019A	.T.	BS	dangerous when wet/ORM-E/no PCB's/filter media bag type filters/oily rags/5% liquid	
0028A	.T.	BS	dangerous when wet/ORM-E/"solid waste"/no PCB's 1/20ppm on OVA/dark powder/crystals	
0030A	.T.	BS	"waste solids"/PCB's/solid waste gray powder/bag filters	
0106A	.T.	BS	[R.M.I. Co.]/flamm.solid/dngr when wet	
** Samples for Hazard Class : FL				
0021A	.T.	FL	PCB/solid waste/PCB rag: rags	
0023A	.T.	FL	PCB/Na PCB oil mix 900ppm on OVA/sludge plus liquid	
0041A	.T.	FL	PCB's/ORM-E lt oil/hvy sludge/combustible/>50ppm OVA	
0046A	.T.	FL	PCB's/water, solvents .25 sludge	
0047T	.T.	FL	PCBs water solvents	
0052A	.T.	FL	ORM-E/waste PCB's oil/hvy sludge	
0055A	.T.	FL	ORM-E/flamm.solid/no PCB's Na oil mix/discharge/oil w/hvy hvy sludge	
0056A	.T.	FL	no PCB's oily liquid	
0065A	.T.	FL	ORM-E/PCB's oil/tan sludge	
0066A	.T.	FL	flamm.solid/[E.M.I. Co.]/no PCB's oil/tan sludge	
0073A	.T.	FL	no PCB's lt oil/no sludge	
0071A	.T.	FL	no labels oil from Del Marva	
0076A	.T.	FL	PCB's/"Seattle City license"	

Hazard Data - Sample Comments - By Hazard Class

Sample ID	Sample Taken?	Hazard Class	Label/Comment	Action Taken
0077A	.T.	FL	thin oil PCB's waste oil from DOF and MHT	
0080A	.T.	FL	thin oil dangerous when wet/ORM-E	
0087A	.T.	FL	bag filters/bad/rags PCB's	
0088A	.T.	FL	dark oil/>1000ppm OVA PCB's	
0089T	.T.	FL	long filters/glass bottles/insulation/30ppm OVA no PCBs	
0090A	.T.	FL	PCB's	
0091A	.T.	FL	[PCB's]/lt wt oil PCB's/242ppm PCB	
0094A	.T.	FL	lt oil/no sludge/reactive to flame no PCB's	
0095A	.T.	FL	lt colored oil/dark sludge no labels	
0098A	.T.	FL	filtered mineral oil flam.solid/ORM-E	
0102A	.T.	FL	Na oil mix/no PCB's flam.solid/ORM-E/no PCB's	
0103A	.T.	FL	Na oil mix flam.solid/ORM-E/no PCB's	
0105A	.T.	FL	Na oil mix flam.solid/dangerous when wet/ORM-E/no PCB's	
0107A	.T.	FL	flam.solid/ORM-E	
0108A	.T.	FL	flam.solid/ORM-E/no PCB's [PCB's], Na oil mix	
0110A	.T.	FL	flam.solid/no PCB's Na discharge	
0111A	.T.	FL	[R.M.I.Co.]/flam.solid/dngr wet/no PCB centrifuge solid	
1007A	.T.	FL	no PCBs Na oil rags	
1009A	.T.	FL	LUBRICOL [PCB's]	
** Samples for Hazard Class : FS				
0002A	.T.	FS	PCBs "solid waste" NA-METAL/plastic qt. bottles	
0002B	.T.	FS	PCB "solid waste" plastic qt. bottles	
0006A	.T.	FS	PCB "solid waste"	

Hazard Data - Sample Comments - By Hazard Class

Sample ID	Sample Taken?	Hazard Class	Label/Comment	Action Taken
0024A	.T.	FS	1000ppm on OVA/brown absorbent material flamm.solid/dangerous when wet/Na oil mix/no PCB's NA-METAL/water reactive/hvy sludge/lt oil	
0026A	.T.	FS	caution PCB's	
0027A	.T.	FS	300ppm on OVA/btm tap cvrd w/tape/oil absorbent flamm.solid/ORM-E/Na oil mix/no PCB's NA-METAL/ water reactive/liquid/heavy sludge	
0032A	.T.	FS	flamm.solid/dangerous when wet/ORM-E/Na metals NA-METAL/Na oil mix/metallic Na blocks	
0034A	.T.	FS	flamm.solid/ORM-E/no PCB's/Na oil mix NA-METAL /hvy oil/sludge/water reactive/Robuck	
0043A	.T.	FS	dangerous when wet/ORM-E/no PCB's/oil filter rags bag filters/absorbent material	
0044A	.T.	FS	dangerous when wet/ORM-E/no PCB's bag filters/absorbent material/caustic/10ppm OVA	
0048B	.T.	FS	PCB's dark brown solid	
0049A	.T.	FS	ORM-E/dangerous when wet steel wool	
0050A	.T.	FS	Comments: White cloth 10 ppm on OVA bag filters ignited in atmosphere	
0053A	.T.	FS	dangerous when wet/ORM-E/ disk type filters	
0058A	.T.	FS	salvage drum NA-METAL/grey bricks in oil	
0059A	.T.	FS	PCB's bottles	
0061A	.T.	FS	PCB's/solids ppe/sand	
0063A	.T.	FS	PCB's/"solid waste" 10,000ppm on OVA/rags/insulation absorbent	
0064A	.T.	FS	PCB's 30,000ppm on OVA/thick hvy sludge	
0083A	.T.	FS	dangerous when wet/ORM-E filters/rags	
0112A	.T.	FS	ORM-E/flamm.solid/no PCB's Na oil mix/Robuck	
1006A	.T.	FS	white gas	

** Samples for Hazard Class : MCG

0084A	.T.	MCG	PCB's insulation
0104A	.T.	MCG	ORM-E/no PCB's Na oil mix
0109A	.T.	MCG	dngr.wet/ORM-E/flamm.solid

003134

Hazard Data - Sample Comments - By Hazard Class

Sample ID	Sample Taken?	Hazard Class	Label/Comment	Action Taken
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0113A	.T.	NCG	Na oil mix/Robuck [R.M.I.Co.]/flamm.solid/dngr wet	
0114A	.T.	NCG	PCB's	

** Samples for Hazard Class : NCL

0001A	.T.	NCL	flam. solid/no PCB's/sodium oil mix combustible	
0008A	.T.	NCL	PCB's/no PCB's/sodium waste oil 500ppm on OVA/oily liquid	
0016A	.T.	NCL	PCB's/flamm.solid/sodium Na metal oily liquid	
0029A	.T.	NCL	flamm.solid/ORM-E/no PCB's centrifuge discharge/lt.oil/hvy sludge	
0042A	.T.	NCL	dangerous when wet/flamm.solid/ORM-E/no PCB's discharge/lt oil/thick sludge	
0047B	.T.	NCL	PCBs/water solvents	
0048A	.T.	NCL	PCBs	
0069A	.T.	NCL	PCB's/PCB liquid dark thick oil	
0069B	.T.	NCL	PCBs PCB liquid	
0075A	.T.	NCL	PCE's oil + water substance	
0115A	.T.	NCL	[R.M.I.Co.]/flamm.solid/dngr wet/no PCB's/ORM-E	
0116A	.T.	NCL	flamm.solid/ORM-E/no PCB's	
1001A	.T.	NCL	LIQUINOX	
1002A	.T.	NCL	PCB contaminated	
1003A	.T.	NCL	split start + finish	

** Samples for Hazard Class : WCS

0004A	.T.	WCS	danger when wet/ORM-E no PCB's sand and charcoal briquettes	
0005A	.T.	WCS	no PCB's/filter bags,cartridges sand and charcoal briquettes	
0007A	.T.	WCS	no PCB's 12 inch filters	
0012A	.T.	WCS	PCB's/solids	

Hazard Data - Sample Comments - By Hazard Class

Sample ID	Sample Taken?	Hazard Class	Label/Comment	Action Taken
0017A	.Y.	NCS	rage,insulation/>50ppm on OVA ORM-E/PCB's/dangerous when wet dark powder/80ppm on OVA	
0020A	.Y.	NCS	dangerous when wet/no PCB's/Na sand rage/filters/insulation/50ppm on OVA	
0022A	.Y.	NCS	PCB/solid waste rage/small plastic bottles	
0033A	.Y.	NCS	PCB's/solid waste gray powder/rags/leaking bottom bung	
0035A	.Y.	NCS	dangerous when wet/solid waste/no PCB's soluble/charcoal briquets/bags	
0036A	.Y.	NCS	PCB's dark powder	
0039A	.Y.	NCS	PCB's/insulation + solids rage/insulation/sample vials	
0045A	.Y.	NCS	ORM-E/flamm.solid/no PCB's/solids,sand rags air hose/rags/absorbent material	
0054A	.Y.	NCS	PCB's brown sand/general trash	
0060A	.Y.	NCS	PCB's [R.M.I. Co.]/flamm.solid hoses/empty buckets	
0062A	.Y.	NCS	dangerous when wet/ORM-E/no PCB's red lumpy sand/3ppm OVA	
0068A	.Y.	NCS	dngrs wet/[R.M.I. Co.]/flamm.solid/ORM-E/no PCB's dark soil like substance (combustible solid)	
0081A	.Y.	NCS	dangerous when wet/ORM-E/Na clay rags and dirt	
0085A	.Y.	NCS	ORM-E/dangerous when wet/no PCB's sand/clear hose	
0086A	.Y.	NCS	dangerous when wet/ORM-E thick sludge/70ppm OVA	
0089A	.Y.	NCS	no PCB's dark oil/paper and plastic	
0089B	.Y.	NCS	no PCBs	
0092A	.Y.	NCS	PCB's/[duPont] sand in drum/visqueer	
0100A	.Y.	NCS	no labels parts + info inside	
0101A	.Y.	NCS	no PCB's trash/Robuck(hazcat-reactive,pH=5)	
1004A	.Y.	NCS	PCBs	
1005A	.Y.	NCS	water/oil	
1008A	.Y.	NCS	Flamm. Solid/No PCBs	

000136

Hazard Data - Sample Comments - By Hazard Class

Sample ID	Sample Taken?	Hazard Class	Label/Comment	Action Taken
Na solid waste				
** Samples for Hazard Class : NPL				
0003A	.Y.	NPL	PCB "glassware" 100ppm OVA	
0010A	.Y.	NPL	flamm.solid/ORM-E/no PCB's/centrifuge discharge oily substance/combustible/100ppm on OVA	
0014A	.Y.	NPL	flamm.solid/ORM-E oily liquid	
0015A	.Y.	NPL	no PCB's/ORM-E/flamm.solid oily liquid/200ppm on OVA	
0025A	.Y.	NPL	ORM-E/no PCB's/centrifuge solids combustible/300ppm on OVA/slightly water reactive	
0031A	.Y.	NPL	flamm.solid/dangerous when wet/Na oil mix/no PCB's combustible/200ppm on OVA/liquid/hvy sludge	
0037A	.Y.	NPL	PCB's/ORM-E/PCB Na oil mix 30gal liquid	
0038A	.Y.	NPL	PCB's oily liquid	
0040A	.Y.	NPL	ORM-E/no PCB's/Na oil mix oily liquid	
0048Y	.Y.	NPL	PCB's brown liquid	
0051A	.Y.	NPL	PCB's Na oil mix/oil	
0057A	.Y.	NPL	PCB's/PCB liquid oily liquid	
0067A	.Y.	NPL	no PCB's oil/dark sludge	
0069Y	.Y.	NPL	PCBs PCB liquid	
0072A	.Y.	NPL	PCB's/"liquid waste" thick dark oil/combustible	
0073A	.Y.	NPL	PCB's/"liquid waste" 50ppm on OVA/combustible/thick dark oil	
0074A	.Y.	NPL	no PCB's lt oil/drk sludge bottom	
0078A	.Y.	NPL	PCB's thin yellow oil	
0079A	.Y.	NPL	no PCB's thin oil/thick sludge	
0093A	.Y.	NPL	dangerous when wet/no PCB's lt oil/plastic bags/charcoal/filters/>10ppm OVA	
0096A	.Y.	NPL	PCB's/liquid PCB thin drk oil/combustible	
0097A	.Y.	NPL	PCB's	

000137

Hazard Data - Sample Comments - By Hazard Class

Sample ID	Sample Taken?	Hazard Class	Label/Comment	Action Taken
0099A	.Y.	NFL	thick oil/paint peeling off drum PCB's/PCB liquid	
1010A	.Y.	NFL	Chevron machine oil 220 oily combustible liquid, brown to yellow	
** Samples for Hazard Class : NS				
0013A	.F.	NS	PCB's ppe/trash bags	
0082A	.F.	NS	dangerous when wet/ORM-K/no PCB's filters	

HAZCAT DATA by SAMPLE ID NO.

Sample Cont.				Container			Hazard			Ph	Ox	Cn	Sulf	Bic	Cl	Sample Taken?
ID No.	Type	Size	Amount	Volume	Mat.	Cond.	Top	Locale	Class	Matrix	Soluble					
0001A	D	55	1.00	55.00	S	F	O		NCL	L	G	15	.F.	.F.	.F.	.F.
0002A	D	55	1.00	55.00	S	F	B		FS	S	Y	7	.F.	.F.	.F.	.F.
0002B	D	55	1.00	55.00	S	F	B		FS	S	Y	14	.F.	.F.	.F.	.F.
0002T	D	55	1.00	55.00	S	F	B		BL	L	Y	14	.F.	.F.	.F.	.F.
0003A	D	55	1.00	55.00	S	F	B		NFL	L	L	15	.F.	.F.	.F.	.F.
0004A	D	55	1.00	55.00	S	F	B		NCS	S	G	15	.F.	.F.	.F.	.F.
0005A	D	55	1.00	55.00	S	F	B		NCS	S	Y	6	.F.	.F.	.F.	.F.
0006A	D	55	1.00	55.00	S	F	B		FS	S	G	15	.F.	.F.	.F.	.F.
0007A	D	55	1.00	55.00	S	F	B		NCS	S	G	15	.F.	.F.	.F.	.F.
0008A	D	55	1.00	55.00	S	F	B		NCL	L	G	15	.F.	.F.	.F.	.F.
0009A	D	55	1.00	55.00	S	F	B		BS	S	Y	12	.F.	.F.	.F.	.F.
0010A	D	55	1.00	55.00	S	F	O		NFL	L	L	15	.F.	.F.	.F.	.F.
0011A	D	55	1.00	55.00	S	F	B		BS	S	Y	12	.F.	.F.	.F.	.F.
0012A	D	55	1.00	55.00	S	F	B		NCS	S	Y	5	.F.	.F.	.F.	.F.
0013A	D	85	0.75	63.75	S	F	O		BS			15	.F.	.F.	.F.	.F.
0014A	D	55	0.75	41.25	S	F	B		NFL	L	L	15	.F.	.F.	.F.	.F.
0015A	D	55	1.00	55.00	S	F	O		NFL	L	L	15	.F.	.F.	.F.	.F.
0016A	D	55	0.75	41.25	S	F	B		NCL	L	G	15	.F.	.F.	.F.	.F.
0017A	D	55	1.00	55.00	S	F	O		NCS	S	G	15	.F.	.F.	.F.	.F.
0018A	D	55	1.00	55.00	S	F	O		BL	L	Y	14	.F.	.F.	.F.	.F.
0019A	D	55	0.75	41.25	S	F	B		BS	S	Y	12	.F.	.F.	.F.	.F.
0020A	D	55	1.00	55.00	S	F	B		NCS	S	Y	11	.F.	.F.	.F.	.F.
0021A	D	85	0.50	42.50	S	F	O		FL	L	L	15	.F.	.F.	.F.	.F.
0022A	D	55	1.00	55.00	S	F	B		NCS	S	G	15	.F.	.F.	.F.	.F.
0023A	D	55	0.33	18.15	S	F	B		FL	L	L	15	.F.	.F.	.F.	.F.
0024A	D	55	1.00	55.00	S	F	O		FS	S	Y	15	.F.	.F.	.F.	.F.
0025A	D	55	1.00	55.00	S	F	B		NFL	L	L	15	.F.	.F.	.F.	.F.
0026A	D	55	1.00	55.00	S	F	B		FS	S	G	15	.F.	.F.	.F.	.F.
0027A	D	55	1.00	55.00	S	F	B		FS	S	Y	15	.F.	.F.	.F.	.F.
0028A	D	55	1.00	55.00	S	F	B		BS	S	Y	14	.F.	.F.	.F.	.F.
0029A	D	55	1.00	55.00	S	F	B		NCL	L	G	15	.F.	.F.	.F.	.F.
0030A	D	55	1.00	55.00	S	F	B		BS	S	Y	14	.F.	.F.	.F.	.F.
0031A	D	55	1.00	55.00	S	F	O		NFL	L	L	15	.F.	.F.	.F.	.F.
0032A	D	55	1.00	55.00	S	F	O		FS	S	Y	15	.F.	.F.	.F.	.F.
0033A	D	55	1.00	55.00	S	F	B		NCS	S	Y	9	.F.	.F.	.F.	.F.
0034A	D	55	1.00	55.00	S	F	B		FS	S	Y	15	.F.	.F.	.F.	.F.
0035A	D	85	1.00	85.00	S	F	O		NCS	S	Y	9	.F.	.F.	.F.	.F.
0036A	D	55	1.00	55.00	S	F	B		NCS	S	G	15	.F.	.F.	.F.	.F.
0037A	D	85	0.50	42.50	S	F	B		NFL	L	L	15	.F.	.F.	.F.	.F.
0038A	D	55	1.00	55.00	S	F	B		NFL	L	L	15	.F.	.F.	.F.	.F.
0039A	D	55	1.00	55.00	S	F	B		NCS	S	G	15	.F.	.F.	.F.	.F.
0040A	D	55	1.00	55.00	S	F	O		NFL	L	L	15	.F.	.F.	.F.	.F.
0041A	D	85	0.75	63.75	S	F	B		FL	L	L	15	.F.	.F.	.F.	.F.
0042A	D	55	0.75	41.25	S	F	O		NCL	L	G	15	.F.	.F.	.F.	.F.
0043A	D	55	0.75	41.25	S	F	B		FS	S	G	15	.F.	.F.	.F.	.F.
0044A	D	55	1.00	55.00	S	F	B		FS	S	G	15	.F.	.F.	.F.	.F.

HAZCAT DATA by SAMPLE ID NO.

Sample ID	Cont Type	Size	Amount	Volume	Mat.	Container Cond.	Top	Locale	Hazard Class	Matrix	Soluble	Ph	Ox	Cn	Sulf	Bic	Cl	Sample Taken?
0045A	D	30	1.00	30.00	S	F	O		NCS	S	G	15	.F.	.F.	.F.	.F.	.F.	.T.
0046A	D	30	1.00	30.00	S	F	B		FL	L	L	15	.F.	.F.	.F.	.T.	.F.	.T.
0047B	D	55	1.00	55.00	S	F	B		NCL	L	Y	9	.F.	.F.	.F.	.F.	.F.	.T.
0047Y	D	55	1.00	55.00	S	F	O		FL	L	L	15	.F.	.F.	.F.	.T.	.F.	.T.
0048A	D	55	0.50	27.50	S	F	B		NCL	L	G	15	.F.	.F.	.F.	.F.	.F.	.T.
0048B	D	55	0.50	27.50	S	F	B		FS	S	G	15	.F.	.F.	.F.	.T.	.F.	.T.
0048Y	D	55	0.50	27.50	S	F	B		NFL	L	L	15	.F.	.F.	.F.	.F.	.F.	.T.
0049A	D	55	1.00	55.00	S	F	O		FS	S	L	15	.F.	.F.	.F.	.T.	.F.	.T.
0050A	D	55	1.00	55.00	S	F	O		FS	S	Y	15	.F.	.F.	.F.	.T.	.F.	.T.
0051A	D	55	1.00	55.00	S	F	O		NFL	L	L	15	.F.	.F.	.F.	.F.	.F.	.T.
0052A	D	55	1.00	55.00	S	F	B		FL	L	L	15	.F.	.F.	.F.	.T.	.F.	.T.
0053A	D	55	1.00	55.00	S	F	B		FS	S	G	15	.F.	.F.	.F.	.T.	.F.	.T.
0054A	D	55	1.00	55.00	S	F	B		NCS	S	G	15	.F.	.F.	.F.	.F.	.F.	.T.
0055A	D	55	1.00	55.00	S	F	O		FL	L	L	15	.F.	.F.	.F.	.T.	.F.	.T.
0056A	D	55	1.00	55.00	S	F	B		FL	L	L	15	.F.	.F.	.F.	.T.	.F.	.T.
0057A	D	55	1.00	55.00	S	F	B		NFL	L	L	15	.F.	.F.	.F.	.F.	.F.	.T.
0058A	D	85	0.50	42.50	S	F	O		FS	S	Y	15	.F.	.F.	.F.	.T.	.F.	.T.
0059A	D	55	1.00	55.00	S	F	O		FS	S	G	15	.F.	.F.	.F.	.T.	.F.	.T.
0060A	D	55	1.00	55.00	S	F	O		NCS	S	G	15	.F.	.F.	.F.	.F.	.F.	.T.
0061A	D	55	1.00	55.00	S	F	B		FS	S	G	15	.F.	.F.	.F.	.T.	.F.	.T.
0062A	D	55	1.00	55.00	S	F	B		NCS	S	G	15	.F.	.F.	.F.	.F.	.F.	.T.
0063A	D	55	1.00	55.00	S	F	B		FS	S	G	15	.F.	.F.	.F.	.T.	.F.	.T.
0064A	D	55	1.00	55.00	S	F	B		FS	S	L	15	.F.	.F.	.F.	.T.	.F.	.T.
0065A	D	55	1.00	55.00	S	F	B		FL	L	L	15	.F.	.F.	.F.	.T.	.F.	.T.
0066A	D	55	1.00	55.00	S	F	O		FL	L	L	15	.F.	.F.	.F.	.T.	.F.	.T.
0067A	D	55	1.00	55.00	S	F	B		NFL	L	L	15	.F.	.F.	.F.	.F.	.F.	.T.
0068A	D	55	0.75	41.25	S	F	O		NCS	S	G	15	.F.	.F.	.F.	.F.	.F.	.T.
0069A	D	55	1.00	55.00	S	F	B		NCL	L	G	15	.F.	.F.	.F.	.F.	.F.	.T.
0069B	D	55	1.00	55.00	S	F	B		NCL	L	Y	9	.F.	.F.	.F.	.F.	.F.	.T.
0069Y	D	55	0.00	0.00	S	F	B		NFL	L	L	15	.F.	.F.	.F.	.F.	.F.	.T.
0070A	D	55	0.75	41.25	S	F	B		FL	L	L	15	.F.	.F.	.F.	.T.	.F.	.T.
0071A	D	55	0.75	41.25	S	F	B		FL	L	L	15	.F.	.F.	.F.	.T.	.F.	.T.
0072A	D	55	1.00	55.00	S	F	B		NFL	L	L	15	.F.	.F.	.F.	.F.	.F.	.T.
0073A	D	55	1.00	55.00	S	F	B		NFL	L	L	15	.F.	.F.	.F.	.F.	.F.	.T.
0074A	D	55	1.00	55.00	S	F	B		NFL	L	L	15	.F.	.F.	.F.	.F.	.F.	.T.
0075A	D	55	0.25	13.75	S	F	B		NCL	L	Y	10	.F.	.F.	.F.	.F.	.F.	.T.
0076A	D	55	1.00	55.00	S	F	B		FL	L	L	15	.F.	.F.	.F.	.T.	.F.	.T.
0077A	D	55	1.00	55.00	S	F	B		FL	L	L	15	.F.	.F.	.F.	.T.	.F.	.T.
0078A	D	55	1.00	55.00	S	F	B		NFL	L	L	15	.F.	.F.	.F.	.F.	.F.	.T.
0079A	D	55	1.00	55.00	S	F	B		NFL	L	L	15	.F.	.F.	.F.	.F.	.F.	.T.
0080A	D	55	1.00	55.00	S	F	B		FL	L	L	15	.F.	.F.	.F.	.T.	.F.	.T.
0081A	D	55	0.75	41.25	S	F	B		NCS	S	G	15	.F.	.F.	.F.	.F.	.F.	.T.
0082A	D	55	1.00	55.00	S	F	B		NS	G	G	15	.F.	.F.	.F.	.F.	.F.	.T.
0083A	D	55	1.00	55.00	S	F	B		FS	S	G	15	.F.	.F.	.F.	.T.	.F.	.T.
0084A	D	55	1.00	55.00	S	F	B		NCG	G	G	15	.F.	.F.	.F.	.F.	.F.	.T.
0085A	D	55	1.00	55.00	S	F	B		NCS	S	G	15	.F.	.F.	.F.	.F.	.F.	.T.

003110

HAZCAT DATA by SAMPLE ID NO.

Sample Cont		Size Amount		Volume Mat.		Container		Hazard			Ph	Ox	Ca	Sulf	Bic	Cl	Sample Taken?
ID No.	Type					Cond.	Top Locale	Class	Matrix	Soluble							
0086A	D	55	1.00	55.00	S	F	B	NCS	S	L	15	.F.	.F.	.F.	.F.	.F.	.T.
0087A	D	55	1.00	55.00	S	F	B	FL	L	L	15	.F.	.F.	.F.	.T.	.F.	.T.
0088A	D	55	1.00	55.00	S	F	B	FL	L	L	15	.F.	.F.	.F.	.T.	.F.	.T.
0089A	D	55	1.00	55.00	S	F	B	NCS	S	G	15	.F.	.F.	.F.	.F.	.F.	.T.
0089B	D	55	1.00	55.00	S	F	B	NCS	S	G	15	.F.	.F.	.F.	.F.	.F.	.T.
0089T	D	55	1.00	55.00	S	F	B	FL	L	L	15	.F.	.F.	.F.	.T.	.F.	.T.
0090A	D	55	1.00	55.00	S	F	B	FL	L	L	15	.F.	.F.	.F.	.T.	.T.	.T.
0091A	D	55	1.00	55.00	S	F	B	FL	L	L	15	.F.	.F.	.F.	.T.	.F.	.T.
0092A	D	55	0.50	27.50	S	F	O	NCS	S	G	15	.F.	.F.	.F.	.F.	.F.	.T.
0093A	D	55	1.00	55.00	S	F	B	NFL	L	L	15	.F.	.F.	.F.	.F.	.F.	.T.
0094A	D	55	0.75	41.25	S	F	B	FL	L	L	15	.F.	.F.	.F.	.T.	.F.	.T.
0095A	D	55	0.75	41.25	S	F	B	FL	L	L	15	.F.	.F.	.F.	.T.	.F.	.T.
0096A	D	55	1.00	55.00	S	F	B	NFL	L	L	15	.F.	.F.	.F.	.F.	.F.	.T.
0097A	D	30	0.75	22.50	S	F	B	NFL	L	L	15	.F.	.F.	.F.	.F.	.F.	.T.
0098A	D	55	0.00	0.00	S	F	B	FL	L	L	15	.F.	.F.	.F.	.T.	.F.	.T.
0099A	D	55	0.00	0.00	S	F	B	NFL	L	L	15	.F.	.F.	.F.	.F.	.T.	.T.
0100A	D	55	0.00	0.00	S	F	O	NCS	S	G	15	.F.	.F.	.F.	.F.	.F.	.T.
0101A	D	55	0.00	0.00	S	F	O	NCS	S	Y	15	.F.	.F.	.F.	.F.	.F.	.T.
0102A	D	55	0.00	0.00	S	F	B	FL	L	L	15	.F.	.F.	.F.	.T.	.F.	.T.
0103A	D	55	0.00	0.00	S	F	O	FL	L	L	15	.F.	.F.	.F.	.T.	.F.	.T.
0104A	D	55	0.00	0.00	S	F	O	NCG	G	G	15	.F.	.F.	.F.	.F.	.F.	.T.
0105A	D	55	0.00	0.00	S	F	B	FL	L	L	15	.F.	.F.	.F.	.T.	.F.	.T.
0106A	D	55	0.00	0.00	S	F	O	BS	S	Y	13	.F.	.F.	.F.	.F.	.F.	.T.
0107A	D	55	0.00	0.00	S	F	O	FL	L	L	15	.F.	.F.	.F.	.T.	.F.	.T.
0108A	D	55	0.00	0.00	S	F	O	FL	L	L	15	.F.	.F.	.F.	.T.	.Y.	.T.
0109A	D	55	0.00	0.00	S	F	O	NCG	G	G	15	.F.	.F.	.F.	.F.	.F.	.T.
0110A	D	55	0.00	0.00	S	F	B	FL	L	L	15	.F.	.F.	.F.	.T.	.F.	.T.
0111A	D	55	0.00	0.00	S	F	O	FL	L	L	15	.F.	.F.	.F.	.T.	.F.	.T.
0112A	D	55	0.00	0.00	S	F	O	FS	S	Y	15	.F.	.F.	.F.	.T.	.F.	.T.
0113A	D	55	0.00	0.00	S	F	O	NCG	G	G	15	.F.	.F.	.F.	.F.	.F.	.T.
0114A	D	55	0.00	0.00	S	F	B	NCG	G	G	15	.F.	.F.	.F.	.F.	.F.	.T.
0115A	D	55	0.00	0.00	S	F	O	NCL	L	G	15	.F.	.F.	.F.	.F.	.F.	.T.
0116A	D	55	0.00	0.00	S	F	O	NCL	L	G	15	.F.	.F.	.F.	.F.	.F.	.T.
1001A	C	1	1.00	1.00	P	F	O	NCL	L	Y	7	.F.	.F.	.F.	.F.	.F.	.T.
1002A	C	5	1.00	5.00	P	F	O	NCL	L	G	15	.F.	.F.	.F.	.T.	.F.	.T.
1003A	C	5	1.00	5.00	P	F	O	NCL	L	Y	7	.F.	.F.	.F.	.F.	.F.	.T.
1004A	C	5	1.00	5.00	P	F	O	NCS	S	G	15	.F.	.F.	.F.	.F.	.F.	.T.
1005A	C	5	1.00	5.00	P	F	O	NCS	S	G	15	.F.	.F.	.F.	.F.	.F.	.T.
1006A	C	5	1.00	5.00	S	F	O	FS	S	G	15	.F.	.F.	.F.	.T.	.F.	.T.
1007A	C	5	1.00	5.00	P	F	O	FL	L	L	15	.F.	.F.	.F.	.T.	.F.	.T.
1008A	C	5	1.00	5.00	P	F	O	NCS	S	Y	10	.F.	.F.	.F.	.F.	.F.	.T.
1009A	C	5	1.00	5.00	S	F	O	FL	L	L	15	.F.	.F.	.F.	.T.	.T.	.T.
1010A	C	5	1.00	5.00	P	F	O	NFL	L	L	15	.F.	.F.	.F.	.F.	.F.	.T.

000111

HAZCAT DATA by HAZARD CLASS

Sample Cont		Container							Hazard			Sample						
ID No.	Type	Size	Amount	Volume	Mat.	Cond.	Top	Locale	Class	Matrix	Soluble	Ph	Ox	Ca	Sulf	Bic	Cl	Taken?
** DATA FOR HAZARD CLASS : BL																		
0002T	D	55	1.00	55.00	S	F	B		BL	L	Y	14	.F.	.F.	.F.	.F.	.F.	.Y.
0018A	D	55	1.00	55.00	S	F	O		BL	L	Y	14	.F.	.F.	.F.	.Y.	.F.	.Y.
** DATA FOR HAZARD CLASS : BS																		
0009A	D	55	1.00	55.00	S	F	B		BS	S	Y	12	.F.	.F.	.F.	.F.	.F.	.Y.
0011A	D	55	1.00	55.00	S	F	B		BS	S	Y	12	.F.	.F.	.F.	.F.	.F.	.Y.
0019A	D	55	0.75	41.25	S	F	B		BS	S	Y	12	.F.	.F.	.F.	.F.	.F.	.Y.
0028A	D	55	1.00	55.00	S	F	B		BS	S	Y	14	.F.	.F.	.F.	.F.	.F.	.Y.
0030A	D	55	1.00	55.00	S	F	B		BS	S	Y	14	.F.	.F.	.F.	.F.	.F.	.Y.
0106A	D	55	0.00	0.00	S	F	O		BS	S	Y	13	.F.	.F.	.F.	.F.	.F.	.Y.
** DATA FOR HAZARD CLASS : FL																		
0021A	D	85	0.50	42.50	S	F	O		FL	L	L	15	.F.	.F.	.F.	.Y.	.F.	.Y.
0023A	D	55	0.33	18.15	S	F	B		FL	L	L	15	.F.	.F.	.F.	.Y.	.F.	.Y.
0041A	D	85	0.75	63.75	S	F	B		FL	L	L	15	.F.	.F.	.F.	.Y.	.F.	.Y.
0046A	D	30	1.00	30.00	S	F	B		FL	L	L	15	.F.	.F.	.F.	.Y.	.F.	.Y.
0047T	D	55	1.00	55.00	S	F	O		FL	L	L	15	.F.	.F.	.F.	.Y.	.F.	.Y.
0052A	D	55	1.00	55.00	S	F	B		FL	L	L	15	.F.	.F.	.F.	.Y.	.F.	.Y.
0055A	D	55	1.00	55.00	S	F	O		FL	L	L	15	.F.	.F.	.F.	.Y.	.F.	.Y.
0056A	D	55	1.00	55.00	S	F	B		FL	L	L	15	.F.	.F.	.F.	.Y.	.F.	.Y.
0065A	D	55	1.00	55.00	S	F	B		FL	L	L	15	.F.	.F.	.F.	.Y.	.F.	.Y.
0066A	D	55	1.00	55.00	S	F	O		FL	L	L	15	.F.	.F.	.F.	.Y.	.F.	.Y.
0070A	D	55	0.75	41.25	S	F	B		FL	L	L	15	.F.	.F.	.F.	.Y.	.F.	.Y.
0071A	D	55	0.75	41.25	S	F	B		FL	L	L	15	.F.	.F.	.F.	.Y.	.F.	.Y.
0076A	D	55	1.00	55.00	S	F	B		FL	L	L	15	.F.	.F.	.F.	.Y.	.F.	.Y.
0077A	D	55	1.00	55.00	S	F	B		FL	L	L	15	.F.	.F.	.F.	.Y.	.F.	.Y.
0080A	D	55	1.00	55.00	S	F	B		FL	L	L	15	.F.	.F.	.F.	.Y.	.F.	.Y.
0087A	D	55	1.00	55.00	S	F	B		FL	L	L	15	.F.	.F.	.F.	.Y.	.F.	.Y.
0088A	D	55	1.00	55.00	S	F	B		FL	L	L	15	.F.	.F.	.F.	.Y.	.F.	.Y.
0089T	D	55	1.00	55.00	S	F	B		FL	L	L	15	.F.	.F.	.F.	.Y.	.F.	.Y.
0090A	D	55	1.00	55.00	S	F	B		FL	L	L	15	.F.	.F.	.F.	.Y.	.Y.	.Y.
0091A	D	55	1.00	55.00	S	F	B		FL	L	L	15	.F.	.F.	.F.	.Y.	.F.	.Y.
0094A	D	55	0.75	41.25	S	F	B		FL	L	L	15	.F.	.F.	.F.	.Y.	.F.	.Y.
0095A	D	55	0.75	41.25	S	F	B		FL	L	L	15	.F.	.F.	.F.	.Y.	.F.	.Y.
0098A	D	55	0.00	0.00	S	F	B		FL	L	L	15	.F.	.F.	.F.	.Y.	.F.	.Y.
0102A	D	55	0.00	0.00	S	F	B		FL	L	L	15	.F.	.F.	.F.	.Y.	.F.	.Y.
0103A	D	55	0.00	0.00	S	F	O		FL	L	L	15	.F.	.F.	.F.	.Y.	.F.	.Y.
0105A	D	55	0.00	0.00	S	F	B		FL	L	L	15	.F.	.F.	.F.	.Y.	.F.	.Y.
0107A	D	55	0.00	0.00	S	F	O		FL	L	L	15	.F.	.F.	.F.	.Y.	.F.	.Y.
0108A	D	55	0.00	0.00	S	F	O		FL	L	L	15	.F.	.F.	.F.	.Y.	.Y.	.Y.
0110A	D	55	0.00	0.00	S	F	B		FL	L	L	15	.F.	.F.	.F.	.Y.	.F.	.Y.
0111A	D	55	0.00	0.00	S	F	O		FL	L	L	15	.F.	.F.	.F.	.Y.	.F.	.Y.
1007A	C	5	1.00	5.00	P	F	O		FL	L	L	15	.F.	.F.	.F.	.Y.	.F.	.Y.
1009A	C	5	1.00	5.00	S	F	O		FL	L	L	15	.F.	.F.	.F.	.Y.	.Y.	.Y.

00011

HAZCAT DATA by HAZARD CLASS

Sample Cont	ID No.	Type	Size	Amount	Volume	Mat.	Cond.	Top	Locale	Hazard Class	Matrix	Soluble	Ph	Ox	Cn	Sulf	Bic	Cl	Sample Taken?
** DATA FOR HAZARD CLASS : FS																			
0002A	D		55	1.00	55.00	S	F	B		FS	S	Y	7	.F.	.F.	.F.	.T.	.F.	.T.
0002B	D		55	1.00	55.00	S	F	B		FS	S	Y	14	.F.	.F.	.F.	.T.	.F.	.T.
0006A	D		55	1.00	55.00	S	F	B		FS	S	G	15	.F.	.F.	.F.	.T.	.F.	.T.
0024A	D		55	1.00	55.00	S	F	O		FS	S	Y	15	.F.	.F.	.F.	.T.	.F.	.T.
0026A	D		55	1.00	55.00	S	F	B		FS	S	G	15	.F.	.F.	.F.	.T.	.F.	.T.
0027A	D		55	1.00	55.00	S	F	B		FS	S	Y	15	.F.	.F.	.F.	.T.	.F.	.T.
0032A	D		55	1.00	55.00	S	F	O		FS	S	Y	15	.F.	.F.	.F.	.T.	.F.	.T.
0034A	D		55	1.00	55.00	S	F	B		FS	S	Y	15	.F.	.F.	.F.	.T.	.F.	.T.
0043A	D		55	0.75	41.25	S	F	B		FS	S	G	15	.F.	.F.	.F.	.T.	.F.	.T.
0044A	D		55	1.00	55.00	S	F	B		FS	S	G	15	.F.	.F.	.F.	.T.	.F.	.T.
0048B	D		55	0.50	27.50	S	F	B		FS	S	G	15	.F.	.F.	.F.	.T.	.F.	.T.
0049A	D		55	1.00	55.00	S	F	O		FS	S	L	15	.F.	.F.	.F.	.T.	.F.	.T.
0050A	D		55	1.00	55.00	S	F	O		FS	S	Y	15	.F.	.F.	.F.	.T.	.F.	.T.
0053A	D		55	1.00	55.00	S	F	B		FS	S	G	15	.F.	.F.	.F.	.T.	.F.	.T.
0058A	D		85	0.50	42.50	S	F	O		FS	S	Y	15	.F.	.F.	.F.	.T.	.F.	.T.
0059A	D		55	1.00	55.00	S	F	O		FS	S	G	15	.F.	.F.	.F.	.T.	.F.	.T.
0061A	D		55	1.00	55.00	S	F	B		FS	S	G	15	.F.	.F.	.F.	.T.	.F.	.T.
0063A	D		55	1.00	55.00	S	F	B		FS	S	G	15	.F.	.F.	.F.	.T.	.F.	.T.
0064A	D		55	1.00	55.00	S	F	B		FS	S	L	15	.F.	.F.	.F.	.T.	.F.	.T.
0083A	D		55	1.00	55.00	S	F	B		FS	S	G	15	.F.	.F.	.F.	.T.	.F.	.T.
0112A	D		55	0.00	0.00	S	F	O		FS	S	Y	15	.F.	.F.	.F.	.T.	.F.	.T.
1006A	C		5	1.00	5.00	S	F	O		FS	S	G	15	.F.	.F.	.F.	.T.	.F.	.T.
** DATA FOR HAZARD CLASS : NCG																			
0084A	D		55	1.00	55.00	S	F	B		NCG	G	G	15	.F.	.F.	.F.	.F.	.F.	.T.
0104A	D		55	0.00	0.00	S	F	O		NCG	G	G	15	.F.	.F.	.F.	.F.	.F.	.T.
0109A	D		55	0.00	0.00	S	F	O		NCG	G	G	15	.F.	.F.	.F.	.F.	.F.	.T.
0113A	D		55	0.00	0.00	S	F	O		NCG	G	G	15	.F.	.F.	.F.	.F.	.F.	.T.
0114A	D		55	0.00	0.00	S	F	B		NCG	G	G	15	.F.	.F.	.F.	.F.	.F.	.T.
** DATA FOR HAZARD CLASS : NCL																			
0001A	D		55	1.00	55.00	S	F	O		NCL	L	G	15	.F.	.F.	.F.	.F.	.F.	.T.
0008A	D		55	1.00	55.00	S	F	B		NCL	L	G	15	.F.	.F.	.F.	.T.	.F.	.T.
0016A	D		55	0.75	41.25	S	F	B		NCL	L	G	15	.F.	.F.	.F.	.T.	.F.	.T.
0029A	D		55	1.00	55.00	S	F	B		NCL	L	G	15	.F.	.F.	.F.	.F.	.F.	.T.
0042A	D		55	0.75	41.25	S	F	O		NCL	L	G	15	.F.	.F.	.F.	.T.	.F.	.T.
0047B	D		55	1.00	55.00	S	F	B		NCL	L	Y	9	.F.	.F.	.F.	.F.	.F.	.T.
0048A	D		55	0.50	27.50	S	F	B		NCL	L	G	15	.F.	.F.	.F.	.F.	.F.	.T.
0069A	D		55	1.00	55.00	S	F	B		NCL	L	G	15	.F.	.F.	.F.	.F.	.F.	.T.
0069B	D		55	1.00	55.00	S	F	B		NCL	L	Y	9	.F.	.F.	.F.	.F.	.F.	.T.
0075A	D		55	0.25	13.75	S	F	B		NCL	L	Y	10	.F.	.F.	.F.	.F.	.F.	.T.
0115A	D		55	0.00	0.00	S	F	O		NCL	L	G	15	.F.	.F.	.F.	.F.	.F.	.T.
0116A	D		55	0.00	0.00	S	F	O		NCL	L	G	15	.F.	.F.	.F.	.F.	.F.	.T.
1001A	C		1	1.00	1.00	P	F	O		NCL	L	Y	7	.F.	.F.	.F.	.F.	.F.	.T.
1002A	C		5	1.00	5.00	P	F	O		NCL	L	G	15	.F.	.F.	.F.	.T.	.F.	.T.

000113

HAZCAT DATA by HAZARD CLASS

Sample Cont ID No. Type	Size	Amount	Volume	Mat.	Container Cond.	Top	Locale	Hazard Class	Matrix	Soluble	Ph	Ox	Cn	Sulf	Bic	Cl	Sample Taken?
1003A	C	5	1.00	5.00	P	F	O	NCL	L	Y	7	.F.	.F.	.F.	.F.	.F.	.Y.
** DATA FOR HAZARD CLASS : NCS																	
0004A	D	55	1.00	55.00	S	F	B	NCS	S	G	15	.F.	.F.	.F.	.F.	.F.	.Y.
0005A	D	55	1.00	55.00	S	F	B	NCS	S	Y	6	.F.	.F.	.F.	.F.	.F.	.Y.
0007A	D	55	1.00	55.00	S	F	B	NCS	S	G	15	.F.	.F.	.F.	.F.	.F.	.Y.
0012A	D	55	1.00	55.00	S	F	B	NCS	S	Y	5	.F.	.F.	.F.	.F.	.F.	.Y.
0017A	D	55	1.00	55.00	S	F	O	NCS	S	G	15	.F.	.F.	.F.	.F.	.F.	.Y.
0020A	D	55	1.00	55.00	S	F	B	NCS	S	Y	11	.F.	.F.	.F.	.F.	.F.	.Y.
0022A	D	55	1.00	55.00	S	F	B	NCS	S	G	15	.F.	.F.	.F.	.F.	.F.	.Y.
0033A	D	55	1.00	55.00	S	F	B	NCS	S	Y	9	.F.	.F.	.F.	.F.	.F.	.Y.
0035A	D	85	1.00	85.00	S	F	O	NCS	S	Y	9	.F.	.F.	.F.	.F.	.F.	.Y.
0036A	D	55	1.00	55.00	S	F	B	NCS	S	G	15	.F.	.F.	.F.	.F.	.F.	.Y.
0039A	D	55	1.00	55.00	S	F	B	NCS	S	G	15	.F.	.F.	.F.	.F.	.F.	.Y.
0045A	D	30	1.00	30.00	S	F	O	NCS	S	G	15	.F.	.F.	.F.	.F.	.F.	.Y.
0054A	D	55	1.00	55.00	S	F	B	NCS	S	G	15	.F.	.F.	.F.	.F.	.F.	.Y.
0060A	D	55	1.00	55.00	S	F	O	NCS	S	G	15	.F.	.F.	.F.	.F.	.F.	.Y.
0062A	D	55	1.00	55.00	S	F	B	NCS	S	G	15	.F.	.F.	.F.	.F.	.F.	.Y.
0068A	D	55	0.75	41.25	S	F	O	NCS	S	G	15	.F.	.F.	.F.	.F.	.F.	.Y.
0081A	D	55	0.75	41.25	S	F	B	NCS	S	G	15	.F.	.F.	.F.	.F.	.F.	.Y.
0085A	D	55	1.00	55.00	S	F	B	NCS	S	G	15	.F.	.F.	.F.	.F.	.F.	.Y.
0086A	D	55	1.00	55.00	S	F	B	NCS	S	L	15	.F.	.F.	.F.	.F.	.F.	.Y.
0089A	D	55	1.00	55.00	S	F	B	NCS	S	G	15	.F.	.F.	.F.	.F.	.F.	.Y.
0089B	D	55	1.00	55.00	S	F	B	NCS	S	G	15	.F.	.F.	.F.	.F.	.F.	.Y.
0092A	D	55	0.50	27.50	S	F	O	NCS	S	G	15	.F.	.F.	.F.	.F.	.F.	.Y.
0100A	D	85	0.00	0.00	S	F	O	NCS	S	G	15	.F.	.F.	.F.	.F.	.F.	.Y.
0101A	D	55	0.00	0.00	S	F	O	NCS	S	Y	15	.F.	.F.	.F.	.F.	.F.	.Y.
1004A	C	5	1.00	5.00	P	F	O	NCS	S	G	15	.F.	.F.	.F.	.F.	.F.	.Y.
1005A	C	5	1.00	5.00	P	F	O	NCS	S	G	15	.F.	.F.	.F.	.F.	.F.	.Y.
1008A	C	5	1.00	5.00	P	F	O	NCS	S	Y	10	.F.	.F.	.F.	.F.	.F.	.Y.

** DATA FOR HAZARD CLASS : NPL

0003A	D	55	1.00	55.00	S	F	B	NPL	L	L	15	.F.	.F.	.F.	.F.	.F.	.Y.
0010A	D	55	1.00	55.00	S	F	O	NPL	L	L	15	.F.	.F.	.F.	.F.	.F.	.Y.
0014A	D	55	0.75	41.25	S	F	B	NPL	L	L	15	.F.	.F.	.F.	.F.	.F.	.Y.
0015A	D	55	1.00	55.00	S	F	O	NPL	L	L	15	.F.	.F.	.F.	.F.	.F.	.Y.
0025A	D	55	1.00	55.00	S	F	B	NPL	L	L	15	.F.	.F.	.F.	.F.	.F.	.Y.
0031A	D	55	1.00	55.00	S	F	O	NPL	L	L	15	.F.	.F.	.F.	.F.	.F.	.Y.
0037A	D	85	0.50	42.50	S	F	B	NPL	L	L	15	.F.	.F.	.F.	.F.	.F.	.Y.
0038A	D	55	1.00	55.00	S	F	B	NPL	L	L	15	.F.	.F.	.F.	.F.	.F.	.Y.
0040A	D	55	1.00	55.00	S	F	O	NPL	L	L	15	.F.	.F.	.F.	.F.	.F.	.Y.
0048T	D	55	0.50	27.50	S	F	B	NPL	L	L	15	.F.	.F.	.F.	.F.	.F.	.Y.
0051A	D	55	1.00	55.00	S	F	O	NPL	L	L	15	.F.	.F.	.F.	.F.	.F.	.Y.
0057A	D	55	1.00	55.00	S	F	B	NPL	L	L	15	.F.	.F.	.F.	.F.	.F.	.Y.
0067A	D	55	1.00	55.00	S	F	B	NPL	L	L	15	.F.	.F.	.F.	.F.	.F.	.Y.
0069T	D	55	0.00	0.00	S	F	B	NPL	L	L	15	.F.	.F.	.F.	.F.	.F.	.Y.

HAZCAT DATA by HAZARD CLASS

Sample ID	Cont No.	Type	Size	Amount	Volume	Mat.	Cond.	Top	Locale	Hazard Class	Matrix	Soluble	Ph	Ox	Cn	Sulf	Bic	Cl	Sample Taken?
0072A	D		55	1.00	55.00	S	F	B		NFL	L	L	15	.F.	.F.	.F.	.F.	.F.	.T.
0073A	D		55	1.00	55.00	S	F	B		NFL	L	L	15	.F.	.F.	.F.	.F.	.F.	.T.
0074A	D		55	1.00	55.00	S	F	B		NFL	L	L	15	.F.	.F.	.F.	.F.	.F.	.T.
0078A	D		55	1.00	55.00	S	F	B		NFL	L	L	15	.F.	.F.	.F.	.F.	.F.	.T.
0079A	D		55	1.00	55.00	S	F	B		NFL	L	L	15	.F.	.F.	.F.	.F.	.F.	.T.
0093A	D		55	1.00	55.00	S	F	B		NFL	L	L	15	.F.	.F.	.F.	.F.	.F.	.T.
0096A	D		55	1.00	55.00	S	F	B		NFL	L	L	15	.F.	.F.	.F.	.F.	.F.	.T.
0097A	D		30	0.75	22.50	S	F	B		NFL	L	L	15	.F.	.F.	.F.	.F.	.F.	.T.
0099A	D		55	0.00	0.00	S	F	B		NFL	L	L	15	.F.	.F.	.F.	.F.	.T.	.T.
1010A	C		5	1.00	5.00	P	F	0		NFL	L	L	15	.F.	.F.	.F.	.F.	.F.	.T.
** DATA FOR HAZARD CLASS : NS																			
0013A	D		85	0.75	63.75	S	F	0		NS			15	.F.	.F.	.F.	.F.	.F.	.F.
0082A	D		55	1.00	55.00	S	F	B		NS	G	G	15	.F.	.F.	.F.	.F.	.F.	.F.

INSTRUCTIONS FOR
CLOR-N-OIL® 50
PCB Screening Kit

A PCB screening test for transformer oil.

EACH KIT CONTAINS:

1. A polyethylene tube with a black dispensing cap containing a colorless ampule (bottom) and a gray ampule (top).
2. A polyethylene tube with a white cap containing 7 ml of buffer solution, a clear ampule (bottom) and a red-green ampule (top).
3. A polyethylene bellows type pipette.

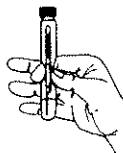
**READ CAUTION SECTION AND INFORMATION ON BACK
BEFORE DOING TEST.**

WEAR RUBBER GLOVES AND SAFETY GLASSES.

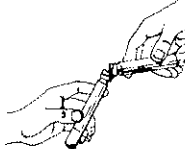
DIRECTIONS



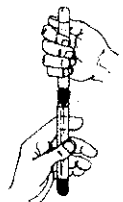
STEP 1. Unscrew the dispenser cap from Tube 1 (with black cap). Using the polyethylene pipette, add exactly 5 ml (up to line) of transformer oil to the tube. Replace the cap securely.



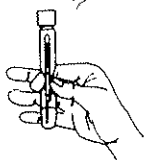
STEP 2. Break the colorless ampule (lower) in the tube by compressing the sides of the tube. Shake for 10 seconds. Break the gray ampule (top) in the tube and shake thoroughly for 10 seconds. (Make sure that the colorless ampule is broken first, the gray one second.) Allow to react for 60 seconds, shaking intermittently several times while timing with a watch.



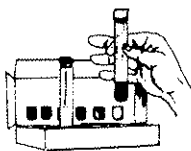
STEP 3. Remove the caps from both tubes and pour the buffer solution from Tube 2 (with white cap) into Tube 1. Replace the cap *tightly* on Tube 1 and shake vigorously for 10 seconds. Vent the tube by partially unscrewing the dispenser cap. Close securely and shake well for 10 seconds more. Vent the tube once again and tighten the cap securely. The oil should no longer appear gray.



STEP 4. Stand Tube 1 upside-down on its cap and allow to settle for two minutes. If the oil layer is below the buffer layer, discontinue the test at this point as the oil is primarily pure PCB (Askarel). See photograph on back of this sheet. If the oil layer is on top of the water layer, position Tube 1 over the top of Tube 2 and open the nozzle on the black cap. Be sure to point the nozzle away from the operator while opening it, and check that the nozzle is open completely before dispensing the buffer. Dispense exactly 5 ml of the buffer solution into Tube 2 (up to line). Replace the cap on Tube 2 and close the dispenser cap on Tube 1.

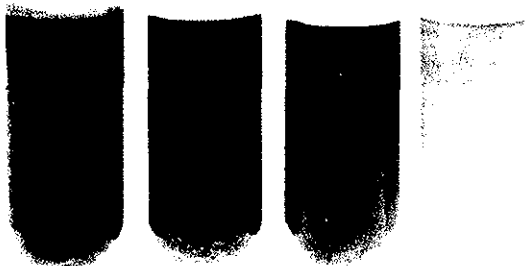


STEP 5. Break the colorless ampule (bottom) in Tube 2 and shake for 10 seconds. Break the colored ampule (top), shake for 10 seconds, and observe color.



STEP 6. If the solution appears purple, the oil sample contains less than 50 ppm PCB. If it appears yellow or colorless, it MAY contain more than 50 ppm PCB and should be tested further by a PCB specific method. Disregard any color that may develop in a thin layer of oil that might form on top of the solution.

less than 50 ppm over 50 ppm



DEXSIL

DEXSIL CORPORATION
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ABOUT THE CLOR-N-OIL TEST KIT

The Clor-N-Oil Test Kit works on the principle of chloride determination. Since PCBs contain chlorine the test kit is able to detect them. However, the test cannot distinguish between any other chlorine containing compound such as trichlorobenzene which may also be in transformer oil. This may cause a result which is known as a "false positive", i.e. the oil will indicate the presence of over 50 ppm PCBs but when analyzed by gas chromatography will show somewhat less than 50 ppm.

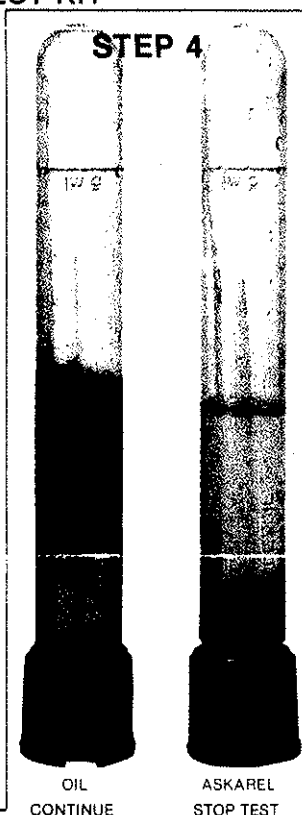
CHEMISTRY OF THE TEST

A precise amount of transformer oil is placed into Tube 1. The colorless ampule containing a catalyst is broken and thoroughly mixed with the oil. A second ampule containing metallic sodium is broken and the sodium, activated by the catalyst, strips chlorine from the PCBs forming sodium chloride. A buffer solution in water is added to the oil which neutralizes the excess sodium and extracts the sodium chloride into the water. The water layer is then separated from the oil and returned to Tube 2.

An ampule containing a precise amount of reagent is broken and mixed with the water. An indicator ampule is then broken and mixed. The color of the mixture is dependent on the amount of PCBs (chlorine) in the transformer oil sample.

SUGGESTIONS FOR USING THE CLOR-N-OIL PCB TEST KIT

- The test works on the principle of chloride detection. Therefore, contamination by salt (sodium chloride), sea water, perspiration, etc. will give a false positive result and require further testing in a laboratory.
- Never touch the ampules, the holder inside the tube, or the pipette tip, as salt may contaminate the test.
- The kit should be examined upon opening to see that all of the components are present and that all the ampules (4) are in place and not leaking. The liquid in Tube 2 (white cap) should be approximately 1/2 inch above the 5 ml line and the tube should not be leaking. The ampules are not supposed to be completely full.
- The Clor-N-Oil test will not work on a sample that contains water. If, in Step 2, the tube gets noticeably warm, builds up pressure, or loses its gray color, the sample probably contains water and the test should not be run. Another test may be tried if the oil sample is dried first.
- Perform the test in a warm, dry area with adequate light. In cold weather, a truck cab is sufficient. If a warm area is not available, Step 4 should be performed while warming Tube 1 in palm of hand.
- When drawing oil into the pipette, do not submerge tip too deeply into the oil sample. This will cause the pipette to drip.
- When inserting the pipette into the polyethylene tube, insert it all the way to the 5 ml line. This prevents oil from getting on the tube walls and reagent holder and allowing too much oil in the tube.
- Always crush the clear ampule in each tube first. If this has not been done, stop the test and start over using another complete kit. A false negative may result and allow a contaminated sample to pass without detection.
- In Step 3, tip Tube 2 to an angle of only about 45°. This will prevent the holder from sliding out.



SPECIAL INSTRUCTIONS FOR ASKAREL FILLED TRANSFORMERS

- In Step 4, if the oil layer goes to the bottom (as shown in the photograph above), discontinue test at this point as the oil is nearly pure PCB (Askarel). Continuing the test further will transfer the oil into Tube 2 and leave the water layer behind, causing false results.

- This test is intended for use only with transformer oil of petroleum origin. It may not be useful for other fluids.

CAUTION

- When crushing the glass ampules, press firmly in the center of the glass ampule ONCE. Never attempt to recrush broken glass in test tube as the glass may come through the plastic and cut fingers.
- In case of accidental breakage onto skin or clothing, wash with large amounts of water. All the ampules are poisonous and should not be taken internally.
- Do not ship kits on passenger aircraft.
- Dispose of kits properly. Treat used kits as PCB waste.

The development work for this kit was sponsored by Electric Power Research Institute, Palo Alto, California and carried out by General Electric Company, Pittsfield, Massachusetts and Dexsil Chemical Corporation, Hamden, Connecticut.

MANUFACTURERS WARRANTY

This kit is warranted to be free of defects in material and workmanship until the expiration date stamped on the box. Manufacturer's sole and exclusive liability under this warranty shall be limited to replacement of any kit that is proved to be defective. Manufacturer shall not be liable for any incidental or consequential damages.

Reliable test results are highly dependent upon the care with which the directions are followed and, consequently, cannot be guaranteed.

J. SHIELDS
 Print Originator's Name
 Ecology and Environment, Inc

RECORD OF COMMUNICATION

Conversation with:

Name Harris

Address County Records

Phone - 271-6405

(Area Code) (Number)

Subject 911a Road Warehouse

Date 2 / 26 / 91
 (Mo) (Day) (Year)

Time 1120 AM / PM

☒ Originator Placed Call

☐ Originator Received Call

TDD# 706-9011-06 PAN# ETX1240 SAA

Discussion: 4th Floor - legal records { Name } to get written
 { Rescrip. } record
 { 1961 - Present }

Tax Office 1001 Preston: (713) 224-1919 X325 / 350
Harris County Houston, TX

{ Jurisdictional Account# 040-043-205-002-079
 Legal Owner (current):
North Loop West Industrial Park
c/o Houston Mortgage Co.
6001 Savoy Dr
Suite 503
Houston, TX

Follow-Up-Action:

000118

ECOLOGY AND ENVIRONMENT, INCORPORATED

6440 Hillcroft Avenue suite #402
Houston, Texas 77081
(713) 771-9460

TELECOPIER # (713) 771-9526

TELECOPIER TRANSMISSION FORM

DATE: 2-26-91 TIME: 1145 Total No. of Pages: 2
(including this form)

TO: JOHN MARTIN

COMPANY: EPA

TELECOPIER PHONE #: _____

FROM: JENNIFER S. ELDS

SPECIAL INSTRUCTIONS: THIS IS THE ONLY LISTED
LEGAL OWNER. LET ME KNOW IF THIS
SATISFIES THE LEGAL DEPT. IF NOT, WHAT
ARE THEY SPECIFICALLY NEEDING?
THANKS!

FOR OPERATORS USE ONLY

JOB¹ CHARGE: _____

000119

SENT BY: _____

J. SHIELDS
Print Originator's Name
Ecology and Environment, Inc.

RECORD OF COMMUNICATION

Conversation with:

Name Sec. of State - Corp. Div.

Address Austin, TX

Phone 512 - 463-5555

(Area Code) (Number)

Subject Elia Rd.

Date 2 / 28 / 91
(Mo) (Day) (Year)

Time 1030 AM/PM

☒ Originator Placed Call

☐ Originator Received Call

TDD# 706-9011-06 PAN# ETX1240SAA

Discussion:

- No listing for North Loop West Industrial Park

- Houston Mortgage Co.

incorporated 1-29-70

charter # 271281-0

Registered Agent: J.D. Hubbard Jr.

Incorporators: Frank Leuk

Geo. Hail

Joe Todd

Officers: J.D. Hubbard

Miller Walsh

} Same address
as listed in
previous RDC

used to be Investors Coordinator, Inc.
changed 5-30-75 to HMC.

Follow-Up Action:

003100

Originator's Signature:

Jennifer Shields

J. SHIELDS
Print Originator's Name
Ecology and Environment, Inc.

RECORD OF COMMUNICATION

Conversation with:

Name North Loop West Ind. Park

Address 2381 Wiercrest

Phone

(Area Code) (Number)

Subject Elm Rd. Warehouse

Date 2 / 28 / 91
(Mo) (Day) (Year)

Time 1600 AM/PM

☒ Originator Placed Call

☐ Originator Received Call

TDD# 706-901-06 PAN# ETX1240544

Discussion: • Mr. Fields, owner of Wiercrest Business Park
leases / broker for North Loop West Ind. Park.

• Left message → will be in Mon. 3-4-91

Back

3-5-91

• Mr. Fields stated that Mr. Ray Hairston
is owner of both the warehouse and
the land itself.

Follow-Up Action:

Originator's Signature: Jennifer Shields

ECOLOGY AND ENVIRONMENT, INCORPORATED

6440 Hillcroft Avenue suite #402
Houston, Texas 77081
(713) 771-9460

TELECOPIER # (713) 771-9526

TELECOPIER TRANSMISSION FORM

DATE: 2-28-91 TIME: 1630 Total No. of Pages: 3
(including this form)

TO: JOHN MARTIN

COMPANY: _____

TELECOPIER PHONE #: _____

FROM: J. SHIELDS

SPECIAL INSTRUCTIONS: _____

INFO. PER CONVERSATION 2-28-91

FOR OPERATORS USE ONLY

JOB CHARGE: _____

000100

Summary Report
Initial Cost Projection Scenario: ELLA WAREHOUSE DRUMS

Page: 1

Projection ID Number: IH

Date: 04/04/91

Cleanup Contractor: RES - Riedel Environmental

TAT Contractor: E&E

Cost Projection Summary

Contractor Personnel	46,404.70	
Contractor Equipment	632.02	
Unit Rate Materials	0.00	
At Cost Materials	5,250.00	
Subcontractors	577.50	
Waste Transportation	15,697.50	
Waste Disposal	133,150.00	
Cleanup Contractor Subtotal	201,711.72	
Federal and State Agencies	0.00	
Extramural Subtotal	201,711.72	
→ 15 % Extramural Contingency	30,256.76	
Extramural Subtotal	231,968.48	230,000
TAT Personnel	19,800.00	
TAT Special Projects	0.00	
TAT Analytical Services	0.00	
Total TAT Costs	19,800.00	20,000
Other Cost Items	0.00	
Extramural Subtotal	251,768.48	250,000
→ 20 % Project Contingency	50,353.70	50,000
Total Extramural Cost	302,122.17	300,000
EPA Regional Personnel	8,500.00	
EPA Non-Regional Personnel	0.00	
EPA Headquarters Direct	600.00	
(10 % of Regional Hours)		
EPA Indirect	12,000.00	
EPA Total	21,100.00	21,100
Project Total	323,222.17	321,100

000123

Summary Report (cont.)

Page:

Initial Cost Projection Scenario: ELLA WAREHOUSE DRUMS

Projection ID Number: IH

Date: 04/04/91

Cleanup Contractor: RES - Riedel Environmental

TAT Contractor: E&E

Project Scope

=====

Number	Step/Milestone	Estimated Duration	Cost
-----	-----	-----	-----
000	GENERAL SITE COSTS	10 Days	304,938.25
006	ADMINISTRATIVE	10 Days	18,283.92

			323,222.17

000124

Detailed Report By Category
Initial Cost Projection Scenario: ELLA WAREHOUSE DRUMS

Page: 1

Projection ID Number: 1H

Date: 04/03/91

Cleanup Contractor: RES - Riedel Environmental

TAT Contractor: E&E

Cost Projection Detail - By Category

Contractor Personnel

Job Category	Number of Employees	Number of Days	Hrs per Day	Labor	PD, Lodge Travel	Total Charge

000 - GENERAL SITE COSTS						

001-RESPONSE MGR-LEVE	1	10	11.00	9,325.80	1,986.22	11,312.02
002-FOREMAN	1	10	11.00	6,756.80	1,035.37	7,792.17
003-CLEANUP TECH LEVE	2	10	11.00	11,202.60	3,972.44	15,175.04
030-DATA ENTRY CLERK	1	10	11.00	3,650.90	1,986.22	5,637.12

Total for GENERAL SITE COSTS :						39,916.35
006 - ADMINISTRATIVE						

001-RESPONSE MGR-LEVE	1	5	11.00	4,662.90	0.00	4,662.90
030-DATA ENTRY CLERK	1	5	11.00	1,825.45	0.00	1,825.45

Total for ADMINISTRATIVE :						6,488.35

Total personnel cost:						46,404.70

Contractor Equipment

Equipment Name	Number Needed	Reg Days	Hours /day	Stby Days	Mob/Demob Days	Decon Days	Mileage	Total Charge

000 - GENERAL SITE COSTS								

043-TRUCK, PICKUP	1	10	11.00	0	2	0	N/A	443.78
167-GENERATOR 50 KW	1	10	11.00	0	2	0	N/A	0.00
298-COMPUTER, PORT PC	1	10	11.00	0	2	0	N/A	188.24

Total for GENERAL SITE COSTS :								632.02

Total equipment cost:								632.02

Unit Rate Materials

0.00

At Cost Materials

Material Name	Material Use	Quantity/Amount	Total Charge

000 - GENERAL SITE COSTS			

SUPPLIES	CLEAN ZONE	1	2,625.00

000125

Detailed Report By Category (cont.)

Page: 2

Initial Cost Projection Scenario: ELLA WAREHOUSE DRUMS

Projection ID Number: IH

Date: 04/03/91

Cleanup Contractor: RES - Riedel Environmental

TAT Contractor: E&E

At Cost Materials

Material Name	Material Use	Quantity/Amount	Total Charge
SUPPLIES	HOT ZONE	1	2,625.00
Total for GENERAL SITE COSTS :			5,250.00
Total at cost materials cost:			5,250.00

Subcontractors

Subcontractor	Service	Billing	Total Charge
000 - GENERAL SITE COSTS			
	ELECTRIC SERVICE	0.0 MONTHS	0.00
	PER DIEM CHARGES	0.0 DAYS	0.00
	PORT BATHROOM REN	0.0 MONTHS	0.00
	SITE WATCHMAN	0.0 WEEKS	0.00
PHONE	PHONE SERVICE	1.0 MONTHS	52.50
RENTAL CAR	RENTAL CAR	1.0	525.00
Total for GENERAL SITE COSTS :			577.50
Total subcontractor cost:			577.50

Waste Transportation

Waste Type	Amount	Loads	Cost Per Mile	Miles	Total Charge
000 - GENERAL SITE COSTS					
DRUMS	116 DRUMS	3	5.00	1000	15,697.50
Total for GENERAL SITE COSTS :					15,697.50
Total transportation cost:					15,697.50

Waste Disposal

Waste Type	Disposal Method	Units	No. of Units	Unit Cost	Total Charge
000 - GENERAL SITE COSTS					
FLAMMABLE LIQ.	INCINERATION	DRUMS	30	500.00	15,750.00
PCBS	INCINERATION	DRUMS	10	500.00	25,000.00

000126

Detailed Report By Category (cont.)
Initial Cost Projection Scenario: ELLA WAREHOUSE DRUMS

Page: 3

Projection ID Number: IH

Date: 04/03/91

Cleanup Contractor: RES - Riedel Environmental

TAT Contractor: E&E

Waste Disposal

Waste Type	Disposal Method	Units	No. of Units	Unit Cost	Total Charge
SODIUM	TREATMENT	DRUMS	50	1500.00	78,750.00
SOLID WASTES	LANDFILL	DRUMS	26	500.00	13,650.00
Total for GENERAL SITE COSTS :					133,150.00

Total disposal cost: 133,150.00

Federal and State Agencies

0.00

20 % Extramural Contingency: 40,342.34

TAT Personnel

Level	Number of Days	Hrs per Day	Hourly Rate	Labor	PD, Lodge Travel	Total Charge
000 - GENERAL SITE COSTS						
PL4	10	11.00	90.00	23,760.00	816.00	19,800.00
Total for GENERAL SITE COSTS :						19,800.00

Total TAT personnel cost: 19,800.00

TAT Special Projects

0.00

TAT Analytical Services

0.00

Other Costs

0.00

15 % Project Contingency: 39,278.11

EPA Regional Personnel

Title	Number of Days	Hrs per Day	Hourly Rate	Labor	PD, Lodge Travel	Total Charge
000 - GENERAL SITE COSTS						
OSC	10	11.00	30.00	3,300.00	1,290.00	4,840.00
Total for GENERAL SITE COSTS :						4,840.00

006 - ADMINISTRATIVE

OSC	10	9.00	30.00	2,700.00	960.00	3,660.00
Total for ADMINISTRATIVE :						3,660.00

000127

Initial Cost Projection Scenario: ELLA WAREHOUSE DRUMS

Projection ID Number: IH

Date: 04/03/91

Cleanup Contractor: RES - Riedel Environmental

TAT Contractor: E&E

EPA Regional Personnel

Title	Number of Days	Hrs per Day	Hourly Rate	Labor	PD, Lodge Travel	Total Charge
-------	-------------------	----------------	----------------	-------	---------------------	-----------------

Total EPA Regional Personnel Cost:						8,500.00
------------------------------------	--	--	--	--	--	----------

EPA Headquarters Cost:						600.00
(10 % of Regional hours)						

EPA Indirect Cost:						12,000.00
(200 hours @ \$60.00 per hour)						

EPA Non-Regional Personnel						0.00
----------------------------	--	--	--	--	--	------

Total EPA Cost:						8,500.00
-----------------	--	--	--	--	--	----------

Total site cost:						309,632.17
------------------	--	--	--	--	--	------------

000128

CONFIDENTIAL DOCUMENT

LOCATED IN A SEPARATE, CONFIDENTIAL FILE

000129

RECORD OF COMMUNICATION	<input type="checkbox"/> PHONE CALL <input type="checkbox"/> DISCUSSION <input type="checkbox"/> FIELD TRIP <input type="checkbox"/> CONFERENCE <input type="checkbox"/> OTHER (SPECIFY)	
	(Record of item checked above)	
TO:	FROM:	DATE
FILE	JOHN MARTIN	5-31-91
TIME		
SUBJECT		
Ella Warehouse Drums - TWC involvement		
SUMMARY OF COMMUNICATION		
<p>On 11/29/90 at 1320, I briefed via phone call, the Texas Water Commission's state contact, David Barker, on the site's potential threats and ERB's proposed action to visit the site as a Classic Emergency Removal Action. He said he would pass the information onto the Houston TWC office.</p> <p>In preparing the Action Memorandum to secure more funds needed to conduct further action to dispose of the hazardous wastes located at the site, TWC has not been re-contacted nor have they contacted the ERB in order to make this removal action a State-lead. The sensitivity and coordination with +</p> <p>concerning this site, it would not be in the best interest of this case to ask the TWC to conduct ^{complete} the removal action needed.</p>		
CONCLUSIONS, ACTION TAKEN OR REQUIRED		
<p>THIS IS A LEAD IN CLEANUP</p> <p style="text-align: right;">AND ERB HAS</p>		
INFORMATION COPIES		
TO:		

000130



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION 6

1445 ROSS AVENUE SUITE 1200

DALLAS TEXAS 75202-2733

MEMORANDUM

DATE: April 30, 1991

SUBJECT: Request for a Removal Action at the
Ella Warehouse Drums
Houston, Harris County, Texas

FROM: John J. Martin *JJM*
On-Scene Coordinator
Removal/Sites Section (6E-ES)

TO: Robert E. Layton Jr., P.E.
Regional Administrator (6A)

THRU: Russell F. Rhoades *RFR*
Director
Environmental Services Division (6E)

SITE ID: 1H
CERCLIS ID#: TX988021416
Category of Removal: Classic Emergency

I. PURPOSE

The purpose of this Action Memorandum is to request and document approval of the proposed removal action described herein for the Ella Warehouse Drums site located at 3308-O Ella Boulevard, Houston, Harris County, Texas. This removal was initiated as a classic emergency action under the OSC's \$50,000 authority with the verbal approval of the Environmental Services Division's (ESD) Division Director. Additional funds are requested to complete this action.

This removal action at the Ella Warehouse Drums is pursuant to the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) as amended, 42 U.S.C. §9601 et seq. This action meets the criteria for initiating a removal action under §300.415 of the National Contingency Plan (NCP) and is anticipated to require less than twelve months and \$2 million for completion.

000131

II. SITE CONDITIONS AND BACKGROUND

A. Site Description

1. Removal site evaluation

EPA's Emergency Response Branch (ERB) received notification on November 20, 1990, from the Houston Health Department of approximately one hundred-thirty (130) drums abandoned in a warehouse. It was reported that most of the drums were labeled "Hazardous Waste D003", "PCB's", "Sodium Metal in Oil", and "Dangerous When Wet". The ERB was requested to respond as soon as possible to evaluate the situation. The ERB action was coordinated with th

The OSC and TAT visited the warehouse on November 21, 1990. TAT monitored the vicinity of the drums for organic vapors, explosive atmospheres, radionuclides and particulates. No levels above background were noted in any of these areas. The drums were arranged in the corner and appeared to be in fair condition with markings as noted in the previous paragraph. No large leaks or bulging drums were seen although there was a small amount of an unknown powdery substance and dark stains at the base of a few drums. There was a large dark stain located near the entrance of the warehouse space. Since the drums were arranged in the corner with debris and a few drums stacked on top, a complete and thorough inspection of all the drums was not possible.

After initial reconnaissance of the warehouse space it was determined that an emergency response action should be initiated under the OSC \$50,000 authority. The emergency response was necessary due to the extremely hazardous nature of the suspected incompatible materials and the close proximity of light industrial businesses and residences. The Response was initiated one week after the initial investigation in order to research methods for handling and sampling the highly reactive sodium wastes. Also, it was anticipated that it would be extremely difficult to arrange equipment and supplies needed during the Thanksgiving weekend.

The OSC activated the Emergency Response Cleanup Services Contract (ERCS) and arrived on site with a full crew to begin stabilization and characterization of drum contents on November 30, 1990. Coordination continued with t State and local officials were notified of the response activity and the suspected hazardous materials. The drums were sampled and then staged in groups according to chemical compatibilities

include PCB oils, sodium blocks, reactive sodium-sludge and oil mixtures, mixtures with flammable liquids, discarded Personnel Protective Equipment, used filters, contaminated spill absorbents, sample vials, and other debris. ERCS demobilized on 4 December 1990.

2. Physical location

The warehouse space with the drums is part of a three-building strip center located on Ella Boulevard. The space (3308-0) is located almost in the center of the warehouse buildings. It is bounded on the east and west sides by other lease-space businesses and one of the two other buildings on either side. Separation of the space is by a sheet metal/sheetrock wall. The southside of the buildings is parking space and driveway. Further south is a powerline easement, then a residential area. Other businesses are located to the north.

The warehouse space is in a populated area with the nearest resident being less than three hundred feet (300') away and a high school less than one (1) mile away. It is surrounded by active businesses occupying neighboring warehouse spaces. Also, several fast food restaurants and retail stores are located nearby.

3. Site characteristics

The site was the storage location of an experimental mobile dechlorination unit, feed stock materials, and waste materials used in the destruction of PCB wastes. Dr. Rockaway of Houston had leased the warehouse space but stopped paying rent in May of 1990. The mobile unit had been removed from the site prior to the investigation by EPA of the site but the drummed feed stock materials and waste materials were abandoned. The PCB destruction mobile unit had used metallic sodium to dechlorinate the PCB oils. Flammable liquids found in some of the drums may have been used to enhance the dechlorination, clean the equipment, or may be a by-product of the reaction.

The company permitted to operate the mobile unit was Chemical Decontamination Corporation (Chem Decon) of Birdsboro, Pa. Chem Decon had a joint venture with R2P2 of which Dr. Rockaway was the major stockholder. Chem Decon operated the mobile unit based on a January 1985 conditional approval from EPA's Office of Toxic Substances to dispose of PCBs. The approval was extended to January 25, 1988 and was based upon the Chem Decon PCB Destruction Process' ability to destroy PCBs to a level below 2 ppm. The PCBs were limited to: (1) mineral oil dielectric fluid containing less than or equal to 650 ppm PCBs, and (2) other oils containing less than 500 ppm PCBs. Furthermore, if the Chem Decon PCB Destruction Process was unable to process PCB oil to a

Decon PCB Destruction Process was unable to process PCB oil to a concentration less than 2 ppm, the PCB oil was to have been disposed of as though it contained the original concentration of PCBs.

A letter dated March 29, 1988, from EPA's PCB disposal section to Dr. Harold Rockaway, indicates that the Chem Decon PCB disposal permit had not been renewed. The letter notes that EPA had been unable to contact Chem Decon and express concerns about the possibility of permitting future operations.

4. Release or threatened release into the environment of a hazardous substance, or pollutant or contaminant

The warehouse was found to contain one hundred sixteen (116) drums and ten (10) pails. The drums were crowded into the corner of warehouse space and they were intermixed with various combustible materials such as a large wooden crate filled with books and user manuals. A few of the drums were placed on top of the other drums. The hazcatting results showed that the contents of the drums were varying mixtures of liquids and solids with a combination of hazardous characteristics including caustic, flammable, reactive, and chlorinated compounds. Two samples for reactivity and five samples for poly-chlorinated biphenyls (PCBs) were provided to the Houston Laboratory. The reactive test results were positive producing a very caustic solution (pH of 12 and 13) and three PCB samples had detectable limits of PCBs. The detectable PCBs levels were 150, 190, and 31,400 parts per million (ppm).

The two main substances of concern are metallic sodium and PCBs, which are defined as hazardous substances by section 101(14) of CERCLA. Also, the reactive sodium wastes are characteristic hazardous wastes regulated by the Resource Conservation and Recovery Act (RCRA) and the PCB oils are regulated under Toxic Substance Control Act (TSCA). The sodium and sodium sludge is highly reactive with water and the atmosphere. The PCBs are improperly stored and they would pose a substantial health risk if involved in a fire. Many of the drummed wastes are flammable. The poorly stored sodium wastes drums intermixed with these materials creates a high potential for fire/explosion. The Houston locality is typically very humid and some of the drums had to have their lids replaced in order to get a tight seal. A chemical fire and resultant poisonous gas emissions would post a substantial health threat to nearby businesses and neighborhood. Furthermore, since the by-products of PCB combustion may include dioxins and furans, cleanup involved in the aftermath of a fire would be very difficult.

5. NPL status

The site will not be referred to the remedial site assessment program for investigation.

6. Maps, pictures and other graphic representations

See Attachment 1 and 2 for site map and photographs.

B. Other Actions to Date

1. Previous actions

As previously discussed in the "Removal site evaluation", (Section II.A.1), a Classic Emergency Removal Action was implemented to address the imminent threat posed by the hazardous nature of the drummed contents. The use of the OSC \$50,000 authority was verbally approved by the ESD Director.

2. Current actions

In relation to the Ella Boulevard site. The initial emergency response action was the sensitivity of their investigation. ERB has pursued options available for disposal of the wastes.

C. State and Local Authorities' Roles

1. State and Local actions to date

The Houston Health Department (HHD) had responded to the warehouse owner's complaint about the abandoned drums. HHD inspected the drums and took one sample from a drum. The HHD then notified the Emergency Response Branch via the 24 hour spill notification number.

The local police, the fire department, and the Houston Hazmat Team were notified of the incident and the chemicals involved. The Texas Water Commission was also notified of the emergency removal action.

2. Potential for continued State/local response

No other State/local response is expected except to provide support as needed.

III. THREAT TO PUBLIC HEALTH OR WELFARE OR THE ENVIRONMENT, AND STATUTORY AND REGULATORY AUTHORITIES

A. Threats to Public Health or Welfare

Sodium is a light, soft, ductile, malleable, silver-white metal. It is a dangerous fire hazard when exposed to heat or flame, or by chemical reaction with moisture, air, or any oxidizing material. Sodium violently decomposes water, forming sodium hydroxide, hydrogen, and heat which may ignite spontaneously and can react vigorously to explosively with oxidizing materials. Heated sodium is spontaneously flammable in air, emitting toxic fumes of sodium oxide. Metallic sodium reacts exothermally with the moisture of body or tissue surfaces, causing thermal and chemical burns due to the reaction with sodium and the sodium hydroxide formed. It is dangerous as a pure metal via all contact routes.

PCBs are highly toxic when inhaled or ingested and typical contaminants in PCBs are some of the more toxic materials known to man. Poisonous by-products and gases are produced in fires, including dioxin, polychlorodibenzofuran, carbon monoxide, hydrochloric acid, and chlorine. Acute exposure to PCBs is moderately toxic to humans through oral, dermal, and inhalation routes with irritation to the eyes, nose, and throat. PCBs are strong chronic irritants causing liver damage, chloracne and other skin disorders. Exposure can damage the nervous system, causing numbness, weakness, and tingling ("pins and needles") in the arms and legs. PCBs are also a probable carcinogen in humans and may be teratogenic, damaging the adult reproductive system.

The site contains 116 drums and 10 five-gallon pails of hazardous wastes, hazardous substances and contaminated debris. The drums were abandoned in a warehouse which is not a proper storage, treatment, or disposal facility. The highly reactive and corrosive characteristics of some of the drums' contents coupled with inevitable deteriorating containers, high humidity of the locality, non-compatible wastes, high human toxicity of the contents, and the densely populated area of the warehouse's vicinity, creates a high potential for a release and a serious health threat to the surrounding community.

B. Threats to the Environment

Due to the urbanized locality of this site, threats to the environment would be minimal. But noteworthy is the property of PCBs to persist in the environment once they are released and may take decades to slowly decompose. PCBs have the tendency to bio-accumulate in the fatty tissue of organisms and they bio-magnify in concentration as they are passed up the food chain.

Therefore, PCBs should be handled only in an established, controlled, regulated area and disposed properly in a permitted facility.

IV. ENDANGERMENT DETERMINATION

Actual or threatened releases of hazardous substances from this site, if not addressed by implementing the response action selected in this Action Memorandum, may present an imminent and substantial endangerment to public health, or welfare, or the environment.

V. PROPOSED ACTIONS AND ESTIMATED COSTS

A. Proposed Actions

1. Proposed action description

The initial start of this Removal Action, implemented under the OSC \$50,000 authority, included the completion of the following tasks: inventory of all containers, characterization of the drummed contents according to chemical groups, separation of drums into compatible groups, and overpacking poor conditioned drums.

The actions remaining to be implemented involve the proper disposal of the 116 drums and 10 five-gallon pails of hazardous wastes and the decontamination of the site. ERCS will provide the needed analytical services based on the hazardous characterization procedures already performed on each drum. Composite samples of the different waste streams will be analyzed for preparing profile sheets needed to arrange proper disposal. The materials will be disposed of off-site at facilities in full compliance with all state and federal regulations including EPA's Off-site Disposal Policy and RCRA's Land Disposal Restrictions. The drums will remain in the warehouse until proper disposal can be arranged for each waste stream. When the drums have been removed, the warehouse floor will be sampled for PCBs and decontaminated as necessary.

2. Contribution to remedial performance

The proposed removal action will complete the cleanup and no further remedial action is anticipated.

3. Description of alternative technologies

This site is not a good candidate for the application of alternative technologies. All hazardous waste streams will be disposed of offsite at a RCRA permitted disposal facility.

4. Applicable or relevant and appropriate requirements (ARARS)

See Attachment 3.

5. Project schedule

A total of 10 days onsite over a two month period is anticipated to arrange final disposal and transportation of all waste streams.

B. Estimated Costs

Extramural Costs:

Total ERCS Costs.....	\$280,000
Total TAT Costs.....	<u>\$ 20,000</u>
Subtotal, Extramural Costs	\$300,000

Extramural Costs Contingency (20% of Subtotal, Extramural Costs; round to nearest thousand).....	<u>\$ 60,000</u>
--	------------------

TOTAL, EXTRAMURAL COSTS	\$360,000
-------------------------	-----------

Intramural Costs:

Intramural Direct Costs.....	\$ 9,100
Intramural Indirect Costs.....	<u>\$ 12,000</u>

TOTAL, INTRAMURAL COSTS	\$ 21,100
-------------------------	-----------

TOTAL, REMOVAL PROJECT CEILING	\$381,100
--------------------------------	-----------

VI. EXPECTED CHANGE IN THE SITUATION SHOULD NO ACTION BE TAKEN

This site poses a threat to the public health and surrounding environment due to the existing fire/explosion potential and subsequent release of hazardous materials. Should the proposed action be disapproved, the site will remain in its present state and immediate actions taken to protect public health will not otherwise be provided in a timely manner.

VII. OUTSTANDING POLICY ISSUES

None.

VIII. ENFORCEMENT

See Attachment 4.

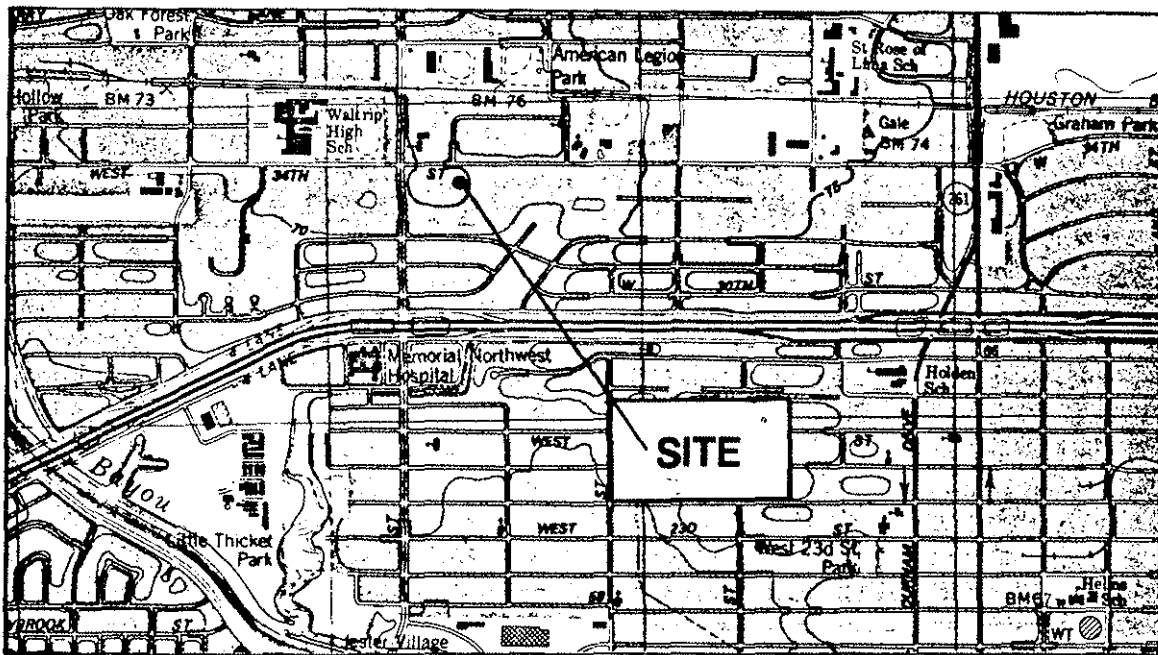
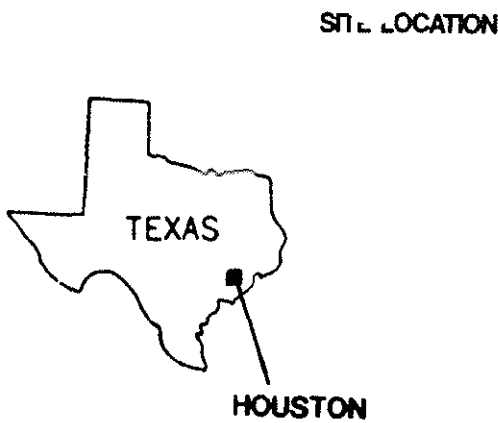
IX. RECOMMENDATION

This decision document represents the selected removal action for the Ella Warehouse Drums site, in Houston, Harris County, Texas, developed in accordance with CERCLA as amended, and not inconsistent with the National Contingency Plan (NCP). This decision is based on the administrative record for the site.

Because conditions at the site meet the NCP Section 300.415(b) (2) criteria for a removal, I recommend your approval of the proposed action. The estimated total project cost is \$321,100 of which \$230,000 is for extramural cleanup contractor costs. Please indicate your approval or disapproval by signing below.

APPROVED: Robert E. Layton Jr. DATE: 6/25/91

DISAPPROVED: _____ DATE: _____



Ella Warehouse Drums

Houston, Harris County, Texas



Ecology and Environment, Inc.
Technical Assistance Team
Region VI

CERCLIS/CASE#: TXD988021416

SOURCE:

Heath Esterak

TDD# T06-9011-06

000170



Business on east side of warehouse

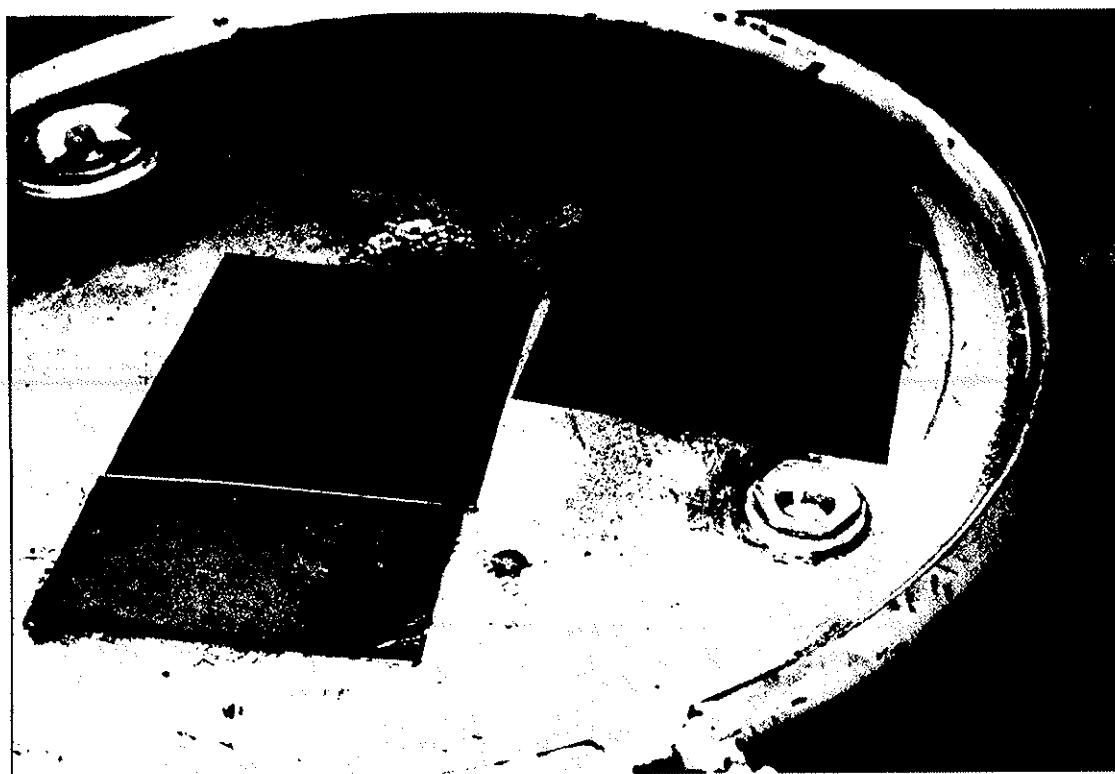


View of drums at northwest end of warehouse

000111



View of corroded drums, stained floor and white powdery substance



View of drum lid labeling

003112

ATTAINMENT OF APPLICABLE OR RELEVANT AND APPROPRIATE STANDARDS
(ARARS)

The removal action will be conducted to eliminate the threat or potential threat of hazardous substances, pollutant or contaminants pursuant to the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) and the Superfund Amendments and Reauthorization Act (SARA) {42 U.S.C. §§9601-9675}, and in a manner consistent with the National Contingency Plan {40 CFR Part 300} as required in {33 U.S.C. §1321(c)(2)} and {42 U.S.C. §9605}.

Any hazardous substance, pollutant, or contaminant that will remain on-site must achieve any standard, requirement, criteria, or limitation under any Federal environmental law, including, but not limited to, the Toxic Substances Control Act (TSCA) {15 U.S.C. 72601 et seq.}, the Safe Drinking Water Act (SDWA) {42 U.S.C. 300f et seq.}, the Clean Air Act (CAA) {42 U.S.C. §7401 et seq.}, the Clean Water Act (CWA) {33 U.S.C. §1251 et seq.}, the Solid Waste Disposal Act {42 U.S.C. §6901 et seq.}, the Migratory Bird Treaty Act {16 U.S.C. §701 et seq.}, or any promulgated standard, requirement, criteria, or limitation under a State environmental or facility siting law that is more stringent than any federal standard, requirement, criteria, or limitation contained in a program approved, authorized or delegated by the Administrator and identified to the President by the State. At the completion, a level or standard of control for such hazardous substances or pollutants or contaminants which at least attains such legally applicable or relevant and appropriate standard, requirement, criteria or limitation shall be achieved. Action shall require a level or standard of control which at least attains Maximum Contaminant Levels (MCLs) established under the SDWA and water quality criteria established under Section 303 or 304 of the CWA, or where such goals or criteria are relevant and appropriate under the circumstances of the release or threatened release.

The ability and qualifications of all parties conducting the proposed Removal Action will be demonstrated. All parties involved will be experienced to conduct the Removal action properly and promptly as required by CERCLA.

Transportation of hazardous substance, pollutants, or contaminants will be in accordance with the Hazardous Materials Transportation Act, {49 U.S.C. §1801 et seq.} and the applicable Department of Transportation regulations, and any additional applicable or relevant and appropriate Local, or State, and/or Federal Regulations.

003113

Disposal of hazardous substances, pollutants, or contaminants will be in accordance with the Resource Conservation and Recovery Act (RCRA) of 1976, {42 U.S.C. §6901 et seq.}, the regulations promulgated under that act, and EPA's Off-site Disposal Policy.

Section 121(d)(3) of CERCLA, 42 U.S.C. §961 (d)(3) as implemented by OSWER Directive 9834.11 (November 13, 1987). Such hazardous substances, pollutants or contaminants shall only be transferred to a facility which is operating in compliance with Sections 3004 and 3005 of the Solid Waste Disposal Act {42 U.S.C. §§6924 and 6925} (or, where applicable, in compliance with the TSCA or other applicable Federal law) and all applicable State requirements.

Requirements under the Occupational Safety and Health Act (OSHA) of 1970 {29 U.S.C. §651 et seq.} and under the laws of States with plans approved under section 18 of the OSHA laws, as well as other applicable safety and health requirements will be followed. Federal OSHA requirements included among other things, Hazardous Materials Operation {20 CFR Part 1910, and amended by 54 Fed. Reg. 9317} (March 5, 1989), all OSHA General Industry {29 CFR Part 1910}, and Construction {29 CFR Part 1926}, standards wherever they are relevant, as well as OSHA recordkeeping and reporting regulations, and the EPA regulations set forth in 40 CFR Section 300.150, relating to the conduct of work at Superfund Sites.



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION 6

1445 ROSS AVENUE, SUITE 1200

DALLAS, TEXAS 75202-2733

MEMORANDUM

SUBJECT: Action Memorandum for Ella Warehouse Drums

FROM: Russell F. Rhoades
Director
Environmental Services Division (6E-E)

TO: Robert E. Layton Jr., P. E.
Regional Administrator (6A)

By this memorandum I am transmitting the Action Memorandum for a Superfund Removal action at Ella Warehouse Drums Site for your review and approval.

You will note that this action has received the concurrence of the appropriate staff in Environmental Services Division, Office of Regional Counsel, and Hazardous Waste Management Division.

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CONFIDENTIAL DOCUMENT

LOCATED IN A SEPARATE, CONFIDENTIAL FILE

003146



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION 6

1445 ROSS AVENUE, SUITE 1200

DALLAS, TEXAS 75202-2733

JUL 16 1991

NOTICE OF POTENTIAL LIABILITY AND EPA CONDUCT OF REMOVAL ACTION
URGENT LEGAL MATTER - PROMPT REPLY NECESSARY
CERTIFIED MAIL: RETURN RECEIPT REQUESTED

Dr. Harold Rockaway
1315 Calhoun
Houston, Texas 77002

Re: Ella Warehouse Drums Site
Houston, Harris County, Texas

Dear Dr. Rockaway:

This letter has three purposes. First, it will provide you with written notice of a response action conducted by the United States Environmental Protection Agency (EPA) at the Ella Warehouse Drums Site (hereinafter referred to as the "site") located at 3308-O Ella Boulevard, Houston, Texas 77018. Second, this letter notifies you of potential liability that you may have incurred with respect to that site. Third, this written notice provides you the opportunity to notify EPA of your willingness to conduct or participate in a removal action, or to finance such an action.

NOTICE

EPA has determined hazardous substances were released or there is a substantial threat of such a release into the environment at the site. On November 30, 1990, EPA declared a classic emergency and secured, sampled, and stabilized the site pursuant to Section 104 of the Comprehensive Environmental Response, Compensation, and Liability Act, as amended (CERCLA), 42 U.S.C. § 9604. The emergency response action consisted of the inventory of all containers, characterization of container contents according to chemical groups, separation of containers into compatible groups, and overpacking of drums in poor condition.

EPA intends to conduct further removal activities pursuant to Section 104 of CERCLA, 42 U.S.C. § 9604. These removal activities involve the proper disposal of the hazardous substances and decontamination of the site. The drums and all other containers will remain in the warehouse until proper disposal can be arranged for each waste stream. Upon concluding arrangements for proper disposal, all materials will be transported and disposed in accordance with all applicable local, state, and Federal regulations.

000177

Under Section 107 of CERCLA, 42 U.S.C. § 9607, responsible parties are those persons who are current owners or operators of the site or past owners or operators who owned or operated the site at the time hazardous substances were disposed of at the site, or persons who arranged for disposal or treatment of hazardous substances at the site (usually the person(s) who generated the hazardous substances), or persons who both selected the site and transported the hazardous substances to the site.

Section 107 of CERCLA, 42 U.S.C. § 9607, states that responsible parties are liable to the United States for the costs incurred in a removal action such as that being proposed for this site. The information available to EPA indicates that you are a potentially responsible party (PRP), because you were an operator of the site at the time the drums and other containers containing hazardous substances were abandoned at the site.

EPA is offering you the opportunity to demonstrate that you are able and willing to conduct the removal action properly and promptly in accordance with the Statement of Work which is included as an attachment to the enclosed draft Administrative Order on Consent (Attachment 2). If you choose not to perform this work, and if you are found to be a responsible party, you may be required to reimburse the United States for the funds expended in connection with this site.

NEGOTIATIONS

Section 122(a) of CERCLA, 42 U.S.C. § 9622(a), requires EPA to notify PRPs, if EPA decides not to use the settlement procedures in Section 122. EPA has decided not to use those settlement procedures in this case. It is EPA's policy not to use those procedures for removal actions unless there is expected to be at least six (6) months of planning between the time the decision is made to conduct the removal action and the time the work is to begin. Since there is to be less than 6 months of planning for this work, the settlement procedures will not be used. However, if you are interested in conducting the work, EPA can take up to fifteen (15) calendar days from your receipt of this letter to negotiate with you.

EPA encourages good faith negotiations between PRPs and EPA, and among PRPs. To assist the PRPs in preparing a proposal and in negotiating with EPA concerning this matter, EPA is providing the following information as attachments to this letter:

1. List of PRPs (Attachment 1)
2. Draft Administrative Order on Consent with Statement of Work (Attachment A) (Attachment 2)
3. Action Memorandum (Attachment 3)

YOUR RESPONSE TO EPA

You should notify EPA, in writing, within five (5) calendar days of your receipt of this letter to indicate your willingness to participate in negotiations, either individually or in conjunction with other parties. If EPA does not receive your response within the specified time, it will be assumed that you do not intend to perform the response action and do not intend to finance such an action.

If you decide to perform this removal action, you will be required to enter into an agreement with EPA. EPA has provided a draft Administrative Order on Consent (AOC) to assist you in preparing a proposal for conducting the required response action. EPA reserves the right to charge, amend, or withdraw the draft AOC and its terms.

Failure to respond within the specified timeframe may subject you to civil administrative enforcement actions, including the issuance of an Administrative Order directing you to complete the removal action. Failure to perform a removal action in accordance with an Administrative Order may subject you to punitive damages of up to three times the amount of costs incurred by the Superfund as a result of your failure to take proper action and civil penalties of not more than twenty-five thousand dollars (\$25,000.00) for each day in which such violation occurs in addition to the amount of any costs incurred by the Superfund.

Your written response should be forwarded to Mr. Tony Robledo at the following telephone number and address:

Mr. Tony Robledo
Superfund Enforcement Officer
Superfund Enforcement Branch (6H-EC)
U.S. Environmental Protection Agency
Region 6
1445 Ross Avenue
Dallas, Texas 75202-2733
(214) 655-6670
FAX # (214) 655-6790

In your response, please indicate an appropriate name, address, and telephone number for further contact. If you or your attorney have any questions pertaining to this matter, please direct them to:

Mr. Pat Y. Spillman, Jr.
Assistant Regional Counsel
Office of Regional Counsel (6C-WT)
U.S. Environmental Protection Agency
Region 6
1445 Ross Avenue
Dallas, Texas 75202-2733
(214) 655-2120
FAX # (214) 655-2182

The factual and legal discussions contained in this letter are intended solely for notification and information purposes. They are not intended to be, and cannot be relied upon, as final EPA positions on any matter set forth herein.

Sincerely,

for Jack Divita
Allyn M. Davis
Director
Hazardous Waste Management Division (6H)
U.S. EPA, Region 6

Enclosures

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ATTACHMENT 1

LIST OF PRPs FOR THE ELLA WAREHOUSE DRUMS SITE

Dr. Harold Rockaway
1315 Calhoun
Houston, Texas 77002
(713) 654-0864

Mr. Roy C. Hairston
3306 Ella Boulevard
Houston, Texas 77018
(713) 688-6624

Ms. Betty N. Ferguson
3306 Ella Boulevard
Houston, Texas 77018
(713) 688-6624

North Loop West Industrial Park, a general partnership
c/o Mr. Roy C. Hairston, partner
c/o Ms. Betty N. Ferguson, partner
3306 Ella Boulevard
Houston, Texas 77018

Noted letter 16 JUL 91
and the PRPS 18 JUL 91

ATTACHMENT 2

THE UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 6
DALLAS, TEXAS

IN THE MATTER OF:

RESPONDENTS	§	DRAFT
Dr. Harold Rockaway,	§	
Mr. Roy C. Hairston, and	§	ADMINISTRATIVE ORDER
Ms. Betty N. Ferguson	§	
North Loop West Industrial Park	§	ON CONSENT
	§	
ELLA WAREHOUSE DRUMS SITE	§	DOCKET NUMBER
HOUSTON, HARRIS COUNTY, TEXAS	§	
	§	CERCLA 06-21-91
Proceeding under Section 106	§	
of the Comprehensive Environ-	§	
mental Response, Compensation,	§	
and Liability Act, as amended	§	
by the Superfund Amendments and	§	
Reauthorization Act of 1986,	§	
P.L. 99-499.		

ADMINISTRATIVE ORDER ON CONSENT

I. JURISDICTION

1. This Administrative Order on Consent ("Consent Order") is entered into voluntarily by the United States Environmental Protection Agency ("EPA") and Dr. Harold Rockaway, Roy C. Hairston, and Betty M. Ferguson, and North Loop West Industrial Park (referred to collectively as "Respondents"). This Consent Order concerns the performance of a removal action for the Ella Warehouse Drums Site located at 3308-0 Ella Boulevard in Houston, Texas.
2. This Consent Order is issued under the authority vested in the President of the United States by Section 106 of the Comprehensive Environmental Response, Compensation, and

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Liability Act of 1980, as amended, (CERCLA), 42 U.S.C.

§ 9606. This authority was delegated to the Administrator of the EPA on January 23, 1987, by Executive Order 12580, 52 Fed. Reg. 2926 (January 29, 1987), and further delegated to Regional Administrators on September 13, 1987 by EPA delegation number 14-14-B. This authority has been redelegated by the Regional Administrator to the Director, Hazardous Waste Management Division, EPA Region 6.

3. Respondents hereby agree to undertake all actions required by the terms and conditions of this Consent Order. In any action by EPA to enforce the terms of this Consent Order, each Respondent waives all rights to contest the jurisdiction of the United States Environmental Protection Agency ("EPA") to issue this Consent Order or to implement and enforce its terms and conditions. Respondents acknowledge, admit and agree to the jurisdiction of EPA to issue and enforce this Consent Order.

II. DEFINITIONS

4. Unless otherwise expressly provided herein, terms used in this Consent Order which are defined in CERCLA or in regulations promulgated under CERCLA shall have the meaning assigned to them in the statute or implementing regulations. Whenever terms listed below are used in this Consent Order, the following definitions shall apply:
 - a. "CERCLA" shall mean the Comprehensive Environmental Response, Compensation, and Liability Act of 1980, as

amended, 42 U.S.C. §§ 9601 et seq.

- b. "Day" shall mean calendar day unless expressly stated to be otherwise. In computing any period of time under this Consent Order, where the due date is a Saturday, Sunday, or Federal holiday, the due date shall be the next day that is not a Saturday, Sunday, or federal holiday.
- c. "EPA" shall mean the United States Environmental Protection Agency.
- d. "Order" or "Consent Order" shall mean this document and all attachments hereto and any additional submittal(s) required pursuant to this Order. Such additional submittals shall be incorporated into and become part of this Order upon Respondent's receipt of written approval by EPA, if approval is required.
- e. "Paragraph" shall mean a portion of this Order identified by an arabic numeral.
- f. "Respondents" shall mean the U.S. Environmental Protection Agency and Roy C. Hairston, Betty N. Ferguson, Dr. Harold Rockaway, and North Loop West Industrial Park.
- g. "Section" shall mean a portion of this Order identified by a roman numeral.
- h. "Site" shall mean the Ella Boulevard Warehouse site located at 3308-0 Ella Boulevard in Houston, Harris County, Texas.

- i. "Submittal" includes all written information
Respondents are required to produce pursuant to the
terms of this Order, including but not limited to,
correspondence, tasks, plans reports, deliverables, and
schedules.

III. PARTIES BOUND

5. This Consent Order applies to the following persons, who
hereinafter are collectively referred to as Respondents:

Dr. Harold Rockaway
1315 Calhoun
Houston, Texas 77002

Roy C. Hairston
3306 Ella Boulevard
Houston, Texas 77018

Betty N. Ferguson
3306 Ella Boulevard
Houston, Texas 77018

North Loop West Industrial Park
3306 Ella Boulevard
Houston, Texas 77018

The provisions of this Consent Order shall apply to and be
binding upon Respondents, their employees, agents,
contractors, receivers, trustees, successors or assigns.

6. This Consent Order shall apply to and be binding upon EPA
and Respondents' agents, successors, and assigns.
Respondents are jointly and severally responsible for
carrying out all actions required of them by this Consent
Order. The signatories to this Consent Order certify that
they are authorized to execute and legally bind the parties
they represent to this Consent Order. No change in the

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ownership or corporate status of any Respondent shall alter the responsibilities of any Respondent under this Consent Order.

7. The Respondents shall provide a copy of this Consent Order to any subsequent owners or successors before property rights, stock, or assets are transferred. The Respondents shall provide a copy of this Consent Order to all contractors, subcontractors, laboratories, and consultants which are retained to conduct any work performed under this Consent Order, within five (5) days after the effective date of this Consent Order or on the date of retaining their services. For the purposes of this Consent Order, the word "day" means calendar day unless otherwise noted in this Consent Order. Notwithstanding the terms of any contract, Respondents are responsible for compliance with this Consent Order and for ensuring that their contractors and agents comply with this Consent Order.

IV. STATEMENT OF PURPOSE

8. In entering into this Consent Order, the mutual objective of EPA and the Respondents is to conduct the removal activities prescribed herein to protect the public health or welfare or the environment from releases or threatened releases of "hazardous substances", "pollutants or contaminants," as those terms are defined in Sections 101(14) and (33) of CERCLA, respectively, 42 U.S.C. §§ 9601(14) and (33). Completion of the removal action will eliminate the threat

to human health and the environment posed by hazardous substances, pollutants or contaminants located at the facility known as the Ella Warehouse Drums Site (hereinafter referred to as the "site" or "facility").

9. The work to be performed under this Consent Order shall be subject to prior approval by the EPA and shall be consistent with the National Oil and Hazardous Substances Pollution Contingency Plan ("NCP"), 40 C.F.R. Part 300. The response action shall be conducted in accordance with all applicable and relevant or appropriate requirements (ARARs).

V. FINDINGS OF FACT

10. The facility is located at 3308-O Ella Boulevard, Houston, Harris County, Texas. A boundary survey, W.P. Morton Survey, Harris County, Texas, identifies the tract of land. The area surrounding the site is in a densely populated area with the nearest resident being less than three hundred (300) feet from the facility. A major high school is less than one mile away. The facility is also surrounded by active businesses occupying neighboring warehouse space. The legal description of the property on which the abandoned drums are located is as follows:

A tract of land containing 3.9707 acres, more or less, out of the W.P. Morton Survey, Abstract 539, in Harris County, Texas, and being a part of and out of that certain tract of land containing 4.57998 acres, more or less, as described in a deed to Jack H. Fields, et al, recorded in Volume 8355, Page 95, Deed Records of Harris County, Texas, and being a portion of that certain 14.15 acre tract of land as described in deed from Arnold Prause to B.J. Brandt, recorded in Volume

1611, Page 629 of the Deed Records of Harris County, Texas, said 14.15 acre tract being a portion of that certain 25 acre, more or less, tract of land described in Deed from Emile Kuhn, et al, to Henry Paschen, recorded in Volume 424, Page 476 of the Deed Records of Harris County, Texas, said 3.9707 acres, more or less, being more fully described as follows:

BEGINNING at a 1 inch iron pipe marking the intersection of the South line of the above described 14.15 acre tract described in deed recorded in Volume 1611, Page 629 of the Deed Records of Harris County, Texas, and the Easterly line of Ella Boulevard, as described in Easement Deed from B.J. Brandt, et ux, to

the City of Houston, recorded in Volume 3184, Page 653, of the Deed Records of Harris County, Texas;

THENCE East along the South line of the herein described 3.9707 acre tract a distance of 1622.15 feet to a 1/2 inch iron rod in the Westerly line of a 60 foot wide drainage easement conveyed to Harris County Flood Control District by instrument recorded in Volume 2092, Page 443 of the Deed Records of Harris County, Texas;

THENCE North 34 deg. 03 min. 00 sec. East along the Westerly line of said drainage easement a distance of 144.45 feet to a point in the North line, being the Northeast corner of said 3.9707 acre tract;

THENCE West along the said North line of subject tract a distance of 1395.35 feet to a fence corner, also being the Northeast corner of a tract of land containing 0.60929 acre, more or less, as described in deed to Ray Allen Mauldin, recorded in Volume 8436, Page 338 of the Deed Records of Harris County, Texas;

THENCE South along the East line of said 0.60929 acre tract, as described in deed to said Ray Allen Mauldin, a distance of 84.68 feet to a fence corner;

THENCE West a distance of 310.08 feet along the South line of the said Ray Allen Mauldin tract to a 1 inch iron pipe being a point in the East line of said Ella Boulevard;

THENCE in a southeasterly direction along the curve to the right having a radius of 2682.06 feet, and a central angle of 1 deg. 00 min. 46 sec., a distance of

35.07 feet to the PLACE OF BEGINNING, and containing 172,963 square feet or 3.9707 acres, more or less.

11. On November 20, 1990, the Houston Health Department contacted the EPA Region 6 Emergency Response Branch (ERB) to report the presence of abandoned drums in a warehouse space located at 3308-O Ella Boulevard. It was reported that most of the drums were labeled "Hazardous Waste D003," "PCBs," "Sodium Metal in Oil," and "Dangerous When Wet."
12. Personnel from the EPA Region 6 Technical Assistance Team (TAT) and the Region 6 EPA Emergency Response Branch entered the facility on November 21, 1990 and discovered one-hundred and sixteen (116) drums and ten (10) pails. The drums were crowded into a corner of the warehouse space with some drums stacked on top of each other. The drums were intermixed with various combustible materials and debris.
13. The EPA On-Scene Coordinator and TAT conducted an assessment of the warehouse space. Based on this assessment, the EPA Region 6 ERB determined that an emergency response action should be initiated.
14. On November 30, 1990, personnel from EPA Region 6 and the Emergency Response Cleanup Services (ERCS) obtained written access from Betty N. Ferguson to enter and have continued access to the site for the purpose of conducting a response action and to take other actions necessary to mitigate releases or threatened releases of hazardous substances, pollutants and contaminants from the site.

15. Samples taken from drums on December 3, 1990, were sent to the U.S. Environmental Protection Agency, Environmental Services Division, Houston Laboratory Section for organic analysis, and RCRA characteristics analysis. A portion of samples were introduced into a known amount of de-ionized water to evaluate the property of reactivity as defined in 40 CFR § 261.23. The material introduced demonstrated the characteristic of reactivity by reacting violently with the de-ionized water. It was also noted that the pH of the de-ionized water increased from approximately pH 7 to greater than pH 12.
16. Contents of the drums abandoned at the facility include polychlorinated biphenyl (PCB) oils, sodium blocks, reactive sodium sludge, oil mixtures, used filters, and mixtures with flammable liquids.
17. The contents of the drums also include liquids and solids in varying mixtures including caustic, flammable, reactive, and chlorinated compounds. Samples taken to determine reactivity of drum contents indicate a highly caustic solution (pH of 12 and 13). Three samples taken for PCBs showed levels of 150 parts per million (ppm), 190 ppm, and 31,400 ppm of PCBs.
18. Sodium concentrations of 1250 ppm and 333 ppm were determined by flame AA analysis. A known amount of sample was introduced into a known amount of de-ionized water and subsequently analyzed for sodium by flame AA analysis.

Calculations were made from the known weights of the materials introduced and from the concentration of sodium in the de-ionized water. It was determined that the composition of the material introduced and recovered contained approximately 87% sodium.

19. PCBs are highly toxic when inhaled or ingested and can cause liver damage and skin disorders in humans.
20. Metallic sodium may cause thermal and chemical burns if it comes into contact with the human body. Sodium is spontaneously flammable in air.
21. Dr. Harold Rockaway was leasing the warehouse space at the time the drums and other containers were abandoned.
22. Respondent North Loop West Industrial Park is a general partnership which owns the site.
23. Respondent Roy C. Hairston is a partner in North Loop West Industrial Park, and was an owner or operator of the site at the time the drums and other containers of hazardous substances were abandoned at the site.
24. Respondent Betty N. Ferguson is a partner in North Loop West Industrial Park and was an owner or operator of the site at the time the drums and other containers of hazardous substances were abandoned at the site.
25. The abandonment of drums and other containers containing hazardous substances at the facility has resulted in the threat of release of hazardous substances within the site and onto adjacent areas.

VI. CONCLUSIONS OF LAW

26. The site is a "facility" as defined in Section 101(9) of CERCLA, 42 U.S.C. § 9601(9), because it is a site or area where hazardous substances have been deposited, stored, disposed of, placed or otherwise came to be located.
27. Each of the Respondents is a "person" as that term is defined in Section 101(21) of CERCLA, 42 U.S.C. § 9601(21).
28. Respondent Dr. Harold Rockaway is an "owner or operator" as that term is defined in Section 101(20)(A) of CERCLA, 42 U.S.C. § 9601(20)(A).
29. Respondent Roy C. Hairston is an "owner or operator" as that term is defined in Section 101(20)(B) of CERCLA, 42 U.S.C. § 9601(20)(B).
30. Respondent Betty N. Ferguson is an "owner or operator" as that term is defined in Section 101(20)(B) of CERCLA, 42 U.S.C. § 9601(20)(B).
31. Respondent North Loop West Industrial Park is an "owner or operator" as that term is defined in Section 101(20)(B) of CERCLA, 42 U.S.C. § 9601(20)(B).
32. The substances found at the site and identified in paragraphs 16 and 17 above are "hazardous substances" as that term is defined in Section 101(14) of CERCLA, 42 U.S.C. § 9601(14), and are subject to the terms and provisions of that act.
33. The abandonment of drums containing hazardous substances at the site constitutes a "release" as that term is defined in

Section 101(22) of CERCLA, 42 U.S.C. § 9601(22). The threat of discharge of hazardous substances within the site and onto adjacent areas constitutes the threat of a release.

34. Pursuant to Section 107(a) of CERCLA, 42 U.S.C. § 9607(a), any person who owned or operated a facility at the time that hazardous substances were disposed of at the facility is liable for all costs of removal or remedial action incurred by the United States Government or a State not inconsistent with the National Contingency Plan (40 C.F.R. Part 300), and as such is a responsible party.
35. Respondent Dr. Harold Rockaway was an operator of the facility, described in paragraph 10 above, at the time hazardous substances were abandoned of at the facility and is, therefore, a responsible party pursuant to Section 107(a) of CERCLA, 42 U.S.C. § 9607(a).
36. Respondent Roy C. Hairston is an owner or operator of the site and was an owner or operator of the site at the time hazardous substances were abandoned at the facility and is, therefore, a responsible party pursuant to Section 107(a) of CERCLA, 42 U.S.C. § 9607(a).
37. Respondent Betty N. Ferguson is an owner or operator of the site and was an owner or operator of the site at the time hazardous substances were abandoned at the facility and is, therefore, a responsible party pursuant to Section 107(a) of CERCLA, 42 U.S.C. § 9607(a).

38. Respondent North Loop West Industrial Park is an owner or operator of the site and was an owner or operator of the site at the time hazardous substances were released at the facility and is, therefore, a responsible party pursuant to Section 107(a) of CERCLA, 42 U.S.C. § 9607(a).
39. As responsible parties, each Respondent is jointly and severally liable for all costs of removal or remedial action incurred by the United States Government or a State not inconsistent with the National Contingency Plan (40 C.F.R. Part 300).
40. Under Section 106(a) of CERCLA, 42 U.S.C. § 9606(a), when EPA determines that there may be an imminent and substantial endangerment to the public health or welfare or the environment because of an actual or threatened release of a hazardous substance from a facility, EPA may take actions including, but not limited to, issuing orders as may be necessary to protect public health and welfare and the environment.

VII. DETERMINATIONS

41. Based on the Findings of Fact and Conclusions of Law, the following determinations are made:
- A. To the extent practicable, the response actions required in this Consent Order will contribute to the efficient performance of any long term remedial action with respect to the release or threatened release concerned, as required by Section 104(a)(2) of CERCLA,

42 U.S.C. § 9604(a)(2).

- B. The information available to the EPA at the time of issuance of this Consent Order indicates that the removal action required in this Consent Order will be conducted properly and promptly by the responsible parties who have agreed to this Consent Order.
- C. There exists an imminent and substantial endangerment to the public health or welfare or the environment due to the actual or threatened release of hazardous substances from the facility.
- D. The actions required by this Consent Order are necessary to protect public health or welfare or the environment. The actions required by this Consent Order are consistent with the National Oil and Hazardous Substances Pollution Contingency Plan, 40 CFR Part 300.

VIII. ORDER

42. Based on the foregoing findings of fact, conclusions of law and determinations, and in order to protect the public health and welfare and the environment and to eliminate the threat of direct contact and other exposure routes with those hazardous substances which exist at the site, Respondents are hereby ORDERED and consent and agree to:
- A. Develop a plan (hereinafter called "workplan") to conduct a removal action at the site. The workplan shall set forth, in detail, the Respondent's plan to

conduct and complete the work activities set forth in Attachment A ("Statement of Work") to this Consent Order.

- B. Respondents shall submit the workplan to the EPA On-Scene Coordinator (OSC), for approval, no later than ten (10) calendar days after the effective date of this Consent Order.
- C. If EPA disapproves of the workplan, in whole or in part, Respondents shall amend the workplan and submit to EPA a revised work plan within ten (10) calendar days of receiving EPA's notification of disapproval of the workplan.
- D. In the event Respondents revise a workplan upon receipt of EPA disapproval, if there is subsequent EPA disapproval of the revised plan, EPA retains the right to allow Respondents an additional opportunity to submit an acceptable plan. EPA also retains the right to conduct its own response action as described in paragraph 56 of this Consent Order.
- E. Upon approval of the workplan, Respondents shall initiate and implement the removal action in accordance with the approved workplan and to the satisfaction and direction of the OSC.
- F. No later than five (5) business days after the effective date of this Consent Order, Respondents shall appoint a Facility Coordinator who shall be responsible

for this Consent Order and the activities required herein. Respondents shall, within the same five (5) business days, notify EPA of the Facility Coordinator's identity and the address and telephone number at which he or she may be contacted. Respondents' Facility Coordinator shall act as directed by the OSC who will be the designated representative for the EPA at the facility. The OSC is John Martin who can be contacted at the address indicated in paragraph 47 below.

- G. All work required pursuant to this Consent Order shall be completed no later than forty-five (45) calendar days after the EPA approves the workplan.

IX. ACCESS

43. Respondents shall provide or obtain access to the property and/or the facility, upon which the work will be performed. This access shall be provided for EPA employees, representatives, contractors, and consultants at all times and Respondents shall permit such persons to be present and move freely in the areas in which any work is being conducted pursuant to this Consent Order. If access cannot be obtained, Respondents shall notify EPA in order to receive assistance in obtaining access and shall reimburse EPA for the cost of such assistance.

X. COMPLIANCE WITH OTHER LAWS

44. EPA retains its rights and power to take any and all action, including but not limited to any Enforcement Action, to

address noncompliance by Respondents with the terms and conditions of this Consent Order, or to address any other event or occurrence covered by this Consent Order upon which EPA is empowered to act under any applicable law.

45. All hazardous substances, pollutants and contaminants removed from the sites shall be handled in accordance with the Resource Conservation and Recovery Act, 42 U.S.C. § 6901, et seq., the regulations promulgated under that Act, and EPA's Off-site Disposal Policy, Section 121 (d)(3), of CERCLA, 42 U.S.C. § 9621(d)(3) as implemented by OSWER Directive 9834.11 (Nov. 13, 1987).
46. Respondents shall insure that all actions required by this Consent Order are undertaken in compliance with all applicable federal, state, and local laws and regulations.

XI. NOTICES AND SUBMISSIONS

47. Whenever notice, or information, or an EPA decision is required, or information is required, or information is required to be forwarded by one party to another under the terms of this Consent Order, it should be directed to the individuals at the addresses specified below, unless those individuals or their successors give notice in writing to all other parties to this Consent Order of another designated individual to receive such communications. Any document will be considered timely if telefaxed to the other parties on the due date as long as the original is mailed to all other parties on the due date.

EPA: Mr. John Martin
On-Scene Coordinator
Emergency Response Branch (6E-ES)
U.S. Environmental Protection Agency
Region 6
1445 Ross Avenue
Dallas, TX 75202-2733
(214) 655-2275

One Copy To: Mr. Tony Robledo
Superfund Enforcement Officer
Superfund Enforcement Branch (6H-EC)
U.S. Environmental Protection Agency
Region 6
1445 Ross Avenue
Dallas, TX 75202-2733
(214) 655-6670

48. In all instances in which this Order requires written submissions to EPA, each submission must be accompanied by the following certification signed by a "responsible official":

"I certify that the information contained in or accompanying this submission is true, accurate, and complete. As to those identified portions of this submission for which I cannot personally verify the truth and accuracy, I certify as the company official having supervisory responsibility for the person(s) who, acting upon my direct instructions, made the verification, that this information is true, accurate, and complete."

For the purpose of this certification, a "responsible official" of a general partnership means a partner of the general partnership. A "responsible official" of a corporation means a president, secretary, treasurer, or vice-president of the corporation in charge of a principal business function, or any other person who performs similar decision-making functions for the corporation

XII. QUALITY ASSURANCE

49. Respondents shall use quality assurance, quality control, and chain of custody procedures described in the "EPA NEIC Policies and Procedures Manual," May 1978, revise November 1984, EPA-330/9-78-001-R and "Interim Guidelines and Specifications for Preparing Quality Assurance Project Plans, " December 1980, QAMS-005/80, while conducting all sample collection and analysis activities required by this Consent Order. These guidelines shall be provided to the Respondents by EPA. Respondents shall consult with EPA in planning for, and prior to, all sampling and analysis as detailed herein by any plan. To provide quality assurance and maintain quality control, the Respondents shall:
- a. Use a laboratory which has a documented Quality Assurance Program that complies with EPA guidance document QAMS-005/80.
 - b. Ensure that EPA personnel and/or EPA authorized representatives are allowed access to the laboratory and personnel utilized by Respondents for analyses.
 - c. Ensure that the laboratory used by the Respondents for analyses, performs according to a method or methods deemed satisfactory to EPA and submits all protocols to be used for analyses to EPA at least five (5) days before beginning analysis.

XIII. FACILITY COORDINATOR AND PROJECT OFFICER DESIGNATIONS

49. Respondents shall appoint a Facility Coordinator who shall be responsible for oversight and implementation of this Consent Order and activities required herein. EPA has appointed a Project Officer who will be EPA's designated representative at the facility. The Project Officer shall have authority of an "On-Scene Coordinator" (OSC) and/or "Remedial Project Manager" as specified in the National Oil and Hazardous Substances Contingency Plan, 40 CFR Part 300, which includes the authority to require a cessation of any activities which may present or contribute to an imminent and substantial endangerment to human health or the environment. For the purpose of this Consent Order, the designations "OSC" and "Project Officer" are synonymous.
50. The OSC, in consultation with the Respondents' Facility Coordinator, shall have the authority to make minor modifications to the workplan, as field conditions dictate, in order to fully implement this Consent Order.
51. The Respondents and the EPA may appoint a new Facility Coordinator or Project Officer, respectively, at any time. Such changes shall be accomplished by notifying the other party, in writing, at least five (5) calendar days prior to the change. The notice shall consist of the name, telephone number, and mailing address of said new Facility Coordinator or Project Officer.

52. Routine communications may be exchanged orally between the parties to facilitate the orderly conduct of work contemplated by this Consent Order, but no such communication shall alter or waive any rights and/or obligations of the parties under this Consent Order. Unless otherwise provided in this Consent Order, the terms of this Consent Order may only be altered by mutual written consent of the parties or their successors in office.

XIV. OTHER CLAIMS

53. In entering into this Consent Order, the Respondents waive any right to seek reimbursement under Section 106(b) of CERCLA, 42 U.S.C. § 9606(b).
54. Nothing in this Consent Order shall constitute or be construed as a release from any claim, cause of action or demand in law or equity against any person, firm, partnership, subsidiary or corporation not a signatory to this Consent Order for any liability it may have arising out of or relating in any way to the generation, storage, treatment, handling, transportation, release, or disposal of any hazardous substances, pollutant or contaminants found at, taken to, or taken from the site.
55. This Consent Order does not constitute any decisions on preauthorization of funds under Section 111(a)(2) of CERCLA, 42 U.S.C. § 9611(a)(2).
56. Respondents shall bear their own costs and attorneys fees.

XV. INDEMNIFICATION

57. Respondents agree to indemnify and hold the United States Government, its agencies, departments, agents, and employees harmless from any and all claims or causes of action arising from or on account of acts or omissions of Respondents, their employees, agents, servants, receivers, successors, or assignees, or any persons including, but not limited to, firms, corporations, subsidiaries and contractors, in carrying out activities under this Consent Order. The United States Government or any agency or authorized representative thereof shall not be held as a party to any contract entered into by Respondents in carrying out activities under this Consent Order.
58. Nothing herein is intended to be an assumption by the EPA or the United States Government of liability for any injuries or damages to persons or property resulting from acts or omissions of the Respondents, their officers, directors, employees, agents, receivers, trustees, successors, assigns or contractors in carrying out activities pursuant to this Consent Order.

XVI. RESERVATION OF RIGHTS

59. Nothing contained in this Consent Order shall be construed as limiting any rights or authority that EPA may now, or hereafter have, under CERCLA, RCRA, or any other law, statute or regulation. Nothing in this Consent Order modifies EPA's authority to take action under Section 104 of

CERCLA including conducting any response action. Nothing in this Consent Order shall prevent EPA from seeking legal or equitable relief to enforce the terms of this Consent Order, including, but not limited to, the right to seek injunctive relief, stipulated penalties, statutory penalties, and/or punitive damages.

60. EPA reserves the right to bring an action against Respondents under Section 107 of CERCLA for recovery of all past response costs incurred by the United States in connection with the site not reimbursed by Respondents, for any costs incurred in the event EPA performs a response action, as well as for any future costs incurred by the United States in connection with response activities conducted under CERCLA at the site.

XVII. REIMBURSEMENT OF RESPONSE COSTS

61. Respondents agree to reimburse EPA for all response costs incurred by the United States. The response costs incurred shall include all oversight costs and all direct and indirect costs incurred by the United States in connection with the site.
62. Within one-hundred and eighty (180) days after completion of the response action, EPA will submit to Respondents an accounting of all response and oversight costs incurred by the U.S. Government with respect to response actions taken by EPA in connection with the Ella Warehouse Drums Site.

63. Respondents shall reimburse EPA by mailing a money order, cashier's check, or certified check payable to the HAZARDOUS SUBSTANCES SUPERFUND no later than thirty (30) calendar days after receipt of the accounting. Payment should be made to the following address:

Regional Hearing Clerk (6C)
U.S. EPA, Region 6
P.O. Box 360582M
Pittsburgh, PA 15251

64. The words "Docket No. CERCLA 06-21-91" should be clearly typed on the check to ensure credit.
65. Respondents shall send simultaneous notices of such payments, including copies of the money order, cashier's check or certified check to the following persons:

Mr. Tony Robledo
Superfund Enforcement Officer
Superfund Enforcement Branch (6H-EC)
United States Environmental Protection Agency
Region 6
Superfund Enforcement Branch (6H-EC)
1445 Ross Avenue
Dallas, Texas 75202-2733

Mr. Pat Y. Spillman, Jr.
Assistant Regional Counsel
Office of Regional Counsel (6C-WT)
U.S. Environmental Protection Agency
Region 6
1445 Ross Avenue
Dallas, Texas 75202-2733

Your adherence to these procedures will ensure proper credit when payments are received.

66. If EPA does not receive payment within thirty (30) calendar days of the due date, interest will accrue on the amount due from the due date at the current annual rate prescribed and

published by the Secretary of the Treasury in the Federal Register and the Treasury Fiscal Requirements Manual Bulletin per annum through the date of payment.

67. If payment is overdue, EPA will also impose a late-payment handling charge of \$15, with an additional delinquent notice charge of \$15 for each subsequent thirty (30) day period. Finally, EPA will apply a six (6) percent per annum penalty on any principal amount not paid within ninety (90) calendar days of the due date.
68. Other penalties for failure to make timely payment may also apply.

XVIII. STIPULATED PENALTIES

69. Respondents agree to pay into the Hazardous Substances Superfund the amounts set forth below as stipulated penalties.
- a. For failure to submit a workplan within the time frame stated in this Consent Order, Respondents shall a pay penalty in the amount of ONE THOUSAND DOLLARS (\$1,000) for each day, or part thereof, during which the violation continues.
- b. For failure to complete the removal action pursuant to an approved workplan within the time frame stated in this Consent Order, Respondents shall a pay penalty in the amount of TWO THOUSAND FIVE HUNDRED DOLLARS (\$2,500) for each day, or part thereof, during which the violation continues.

- c. For failure to submit any report or other deliverable required under this Consent Order, Respondents shall pay a penalty in the amount of ONE THOUSAND DOLLARS (\$1,000) for each day, or part thereof, during which the violation continues.
- d. For failure to reimburse the United States pursuant to the terms of Section XVII of this Consent Order, Respondents shall pay a penalty in the amount of ONE THOUSAND DOLLARS (\$1,000) for each day, or part thereof, during which the violation continues.

70. Payment of stipulated penalties shall be made by mailing a money order, cashier's check, or certified check payable to the HAZARDOUS SUBSTANCES SUPERFUND within thirty (30) calendar days of the effective date of this document to the following address:

Regional Hearing Clerk (6C)
U.S. EPA, Region 6
P.O. Box 360582M
Pittsburgh, PA 15251

- 71. The words "Docket No. CERCLA 06-21-91" should be clearly typed on the check to ensure credit.
- 72. Respondents shall send simultaneous notices of such payments, including copies of the money order, cashier's check or certified check to the following:

Mr. Tony Robledo
Superfund Enforcement Officer
Superfund Enforcement Branch (6H-EC)
United States Environmental Protection Agency
Region 6
1445 Ross Avenue
Dallas, Texas 75202-2733

Mr. Pat Y. Spillman, Jr.
Assistant Regional Counsel
Office of Regional Counsel (6C-WT)
U.S. Environmental Protection Agency
Region 6
1445 Ross Avenue
Dallas, Texas 75202-2733

Your adherence to these procedures will ensure proper credit when payments are received.

73. If EPA does not receive payment within thirty (30) days of the due date, interest will accrue on the amount due from the due date at the current annual rate prescribed and published by the Secretary of the Treasury in the Federal Register and the Treasury Fiscal Requirements Manual Bulletin per annum through the date of payment.
74. The due date is the date or dates specified in the Administrative Order for payment unless the respondent invokes dispute resolution pursuant to Section XIX of this Consent Order. If dispute resolution is invoked, for purposes of interest calculation, the due date is the date of final resolution of the dispute.
75. If payment is overdue, EPA will also impose a late-payment handling charge of \$15, with an additional delinquent notice charge of \$15 for each subsequent thirty (30) day period. Finally, EPA will apply a six (6) percent per annum penalty on any principal amount not paid within ninety (90) days of the due date.
76. Other penalties for failure to make timely payment may also apply.

77. The stipulated penalties for violations of this Consent Order, as set forth above, shall be in addition to any other remedies or sanctions which may be available to EPA by reason of the Respondent's failure to comply with the requirements of this Consent Order.

XIX. DISPUTE RESOLUTION

78. If Respondents object to any EPA notice of disapproval or requirement pursuant to Section VIII, XVII, or XVIII of this Consent Order, Respondents shall notify the OSC, in writing, of their objections within seven (7) calendar days of receipt of the notice of disapproval or requirement. Respondents' written objections shall define the dispute, state the basis of Respondents' objections, and shall be sent to the OSC by certified mail, return receipt requested. The OSC and Respondents then have an additional seven (7) calendar days to resolve the dispute.
79. If no agreement is reached between Respondents and the OSC, Respondents may request, in writing, a determination by the Chief of the Superfund Enforcement Branch, EPA Region 6 (Chief) of the Hazardous Waste Management Division. The request shall be sent, by certified mail, return receipt requested, to the Chief no later than two (2) calendar days after expiration of the prior seven-day resolution period and should state the basis of Respondent's objections.
80. The Chief and Respondents shall then have seven (7) calendar days in which to attempt to resolve the dispute. If no

agreement is reached between the Chief and Respondents, the resolution shall be reduced to writing and signed by the Chief and incorporated into this Consent Order. The decision of the Chief shall be binding upon Respondents. If Respondents do not agree to perform the work in dispute as determined by the Chief, EPA reserves the right to conduct the work itself, to seek reimbursement from Respondents, and/or seek any other appropriate relief.

81. Respondent is not relieved of its obligation to conduct work while a matter is pending in dispute resolution.

XX. PENALTIES FOR NONCOMPLIANCE

82. Failure to comply with this Consent Order, or any portion thereof, without sufficient cause, may subject Respondents, under Section 107(c)(3) of CERCLA, 42 U.S.C. § 9607(c)(3), to liability for punitive damages in an amount up to three times the costs incurred by the Fund as a result of the Respondents' failure to take proper action.

XXI. RECORD PRESERVATION

83. Respondents shall preserve, during the pendency of this Consent Order and for a minimum of six (6) years after the termination of this Consent Order, all records and documents in its possession of its divisions, employees, agents, or contractors, successors or assigns, prepared pursuant to or under the requirements of, or which in any way relate to this Consent Order, regardless of any document retention policy to the contrary.

84. Respondents shall notify EPA ninety (90) calendar days prior to the destruction of any documents required to be kept pursuant to this section. Upon request by EPA, Respondents shall make available to EPA the actual records or copies of the actual records required to be maintained pursuant to this paragraph.

XXIII. EFFECTIVE DATE AND SUBSEQUENT MODIFICATION

85. The effective date of this Consent Order is the date on which the Order is signed by the Director, Hazardous Waste Management Division, EPA, Region 6.
86. This Consent Order may be amended by mutual agreement of EPA and Respondents. Amendments shall be in writing and shall be effective when signed by the Director, Hazardous Waste Management Division, EPA, Region 6. Agreed changes by the OSC do not constitute a modification of this Consent Order.
87. EPA may determine that in addition to tasks completed under this Consent Order, additional work may be required. EPA may direct as an amendment to this Consent Order, that the Respondents perform these response actions in addition to those required herein by any plan. Subject to the dispute resolution clause in Section XIX of this Consent Order, Respondents shall implement the additional tasks which EPA determines are necessary. The additional work shall be completed according to the standards, specifications, and schedule set forth by EPA in the modified workplan.

88. In the event of unanticipated or changed circumstances at the site, Respondents shall notify the EPA On-Scene Coordinator by telephone within twenty-four (24) hours of discovery of the new or changed circumstances.
89. All reports, plans, specifications, schedules, and attachments required by this Consent Order are, upon approval by EPA, incorporated into this Consent Order. Any non-compliance with such EPA approved reports, plans, specifications, schedules, and attachments shall be considered a failure to achieve the requirements of this Consent Order and may subject Respondents to penalties as provided herein.
90. No informal advice, guidance, suggestions, or comments by EPA regarding reports, plans, specifications, schedules, and any other writing submitted by Respondents will be construed as relieving Respondents of their obligation to obtain such formal approval as may be required by this Consent Order.

XXIII. TERMINATION

91. Except for the record preservation requirements under Section XXI of this Consent Order, the provisions of this Consent Order shall be satisfied when all actions required to be taken by this Consent Order have been completed to the satisfaction of EPA, and Respondents have been notified by EPA in writing that all of the terms of this Consent Order have been complied with and the Consent Order is terminated.

Dated, entered, and effective as of this _____ day of _____, 1991, with the agreement and consent of all parties.

Allyn M. Davis
Director
Hazardous Waste Management Division (6H)
U.S. EPA, Region 6

AGREED TO:

By: _____
Dr. Harold Rockaway

(Print name)

Date: _____

By: _____
Mr. Roy C. Hairston

(Print name)

Date: _____

By: _____
Betty N. Ferguson

(Print name)

Date: _____

By: _____
North Loop West Industrial Park,
a general partnership

Date: _____

Roy C. Hairston, partner

Betty N. Ferguson, partner

ATTACHMENT A

STATEMENT OF WORK FOR ELLA WAREHOUSE DRUMS SITE

The remaining response actions involve the proper disposal of the hazardous substances contained in drums and other containers at the site and the decontamination of the site. Respondents shall obtain the analytical data necessary to profile the wastes for proper disposal. The drums shall remain in the warehouse until proper disposal can be arranged for each waste stream. Respondents shall dispose of all hazardous substances, pollutants and contaminants, in compliance with all local, state, and federal regulations. When the drums have been removed, Respondents shall sample the warehouse floor for PCBs and decontaminate the site as necessary.

STATEMENT OF WORK

- A. Respondents shall develop a plan (hereinafter called "workplan") to undertake the following activities and to comply with the following requirements:
1. Analyze representative samples from the different waste streams present at the site and prepare waste profiles necessary for proper disposal. Respondents may use sampling data obtained by EPA through its hazardous characterization procedures.
 2. Conduct a removal action to eliminate the release or threat of release of hazardous substances, pollutants or contaminants pursuant to the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) and the Superfund Amendments and Reauthorization Act (SARA) and with the National Contingency Plan (33 U.S.C. § 1321, 40 CFR Part 300).
 3. Demonstrate the ability and qualifications of the parties conducting the proposed removal action. Demonstrate that the parties are experienced to conduct the removal action properly and promptly as required by Section 104 of CERCLA, as amended, 42 U.S.C. § 9604.
 4. Transport hazardous substances, pollutants, and contaminants in accordance with the applicable Department of Transportation regulations, and any additional applicable and relevant Local, or State, and or Federal regulations.
 5. Dispose of hazardous substances, pollutants, and contaminants in accordance with the Resource Conservation and Recovery Act of 1976, 42 U.S.C. § 6921, et seq., the regulations promulgated under that

act, and EPA's Offsite Disposal Policy, Section 121(d)(3) of CERCLA, 42 U.S.C. § 9621(d)(3) as implemented by OSWER Directive 9834.11 (November 13, 1987). Such hazardous substance, pollutant, and contaminant shall only be transferred to a facility which is operating in compliance with Sections 3004 and 3005 of the Solid Waste Disposal Act (42 U.S.C. §§ 6924 and 6925) (or, where applicable, in compliance with the Toxic Substances Control Act (15 U.S.C. § 2601 et seq.) or other applicable Federal law) and all applicable State requirements.

6. Conduct post-removal sampling plan of the warehouse floor for the presence of PCBs. Respondents shall decontaminate the site as instructed by the OSC.
7. Any hazardous substances, pollutants or contaminants that will remain onsite must achieve any standard, requirement, criteria, or limitation under any Federal environmental law, including, but not limited to, the Toxic Substances Control Act (15 U.S.C. § 2601 et seq.), the Safe Drinking Water Act (42 U.S.C. § 300f et seq.), the Clean Air Act (42 U.S.C. § 7401 et seq.), and the Clean Water Act (33 U.S.C. § 1251 et seq.), the Marine Protection, Research and Sanctuaries Act (33 U.S.C. § 6901 et seq.) or any promulgated standard, requirement, criteria, or limitation under a state environmental or facility siting law that is more stringent than any federal standard, requirement, criteria, or limitation including each such state standard, requirement, criteria, or limitation contained in a program approved, authorized or delegated by the Administrator to the State. At completion, a level or standard of control for such hazardous substance or pollutant or contaminant which at least attains such legally applicable or relevant and appropriate standard, requirement, criteria or limitation shall be achieved.
8. Adhere to the requirements under the Occupational Safety and Health Act of 1970 (29 U.S.C. § 651 et seq.) (OSH Act) and under the laws of the United States with plans approved under Section 18 of the OSH Act (State OSH laws), as well as other applicable safety and health requirements. Federal OSHA requirements include, among other things, Hazardous Material Operation (20 CFR Part 1910, as amended by 54 Fed. Reg. 9317) (March 5, 1989), all OSHA General Industry (29 CFR Part 1918), standards wherever they are relevant, as well as OSHA record keeping and reporting regulations, and the U.S. Environmental Protection

Agency regulations set forth in 40 CFR Section 300.150, relating to the conduct of work at Superfund Sites.

- B. No later than ten (10) calendar days after receipt of an Order, you shall, by certified mail or express mail, return receipt requested, send the workplan to the EPA On-Scene Coordinator ("OSC").
- C. Upon EPA approval of the workplan, you shall initiate and implement the removal action in accordance with the approved workplan.
- D. During the implementation of the workplan, it may become necessary, due to site conditions, for the OSC to make modifications to the workplan. You shall comply and perform all such modifications as directed, in writing, by the OSC.
- E. You shall submit a written weekly report which shall be due by the close of business of the following Monday of every work week. This report shall include, but not be limited to, sampling results, the dates of activity, the work performed, and a discussion of any problems encountered. This report shall be submitted to the OSC.
- F. You shall submit a written report upon completion of the Removal Action. This report shall follow the reporting requirements described in 40 CFR § 300.165.
- G. You shall notify the OSC at least twenty-four (24) hours prior to the initiation of the workplan.
- H. All removal activities pursuant to a Consent Order shall be completed no later than forty-five (45) calendar days from the date EPA approves the workplan.

003156

CONFIDENTIAL DOCUMENT

LOCATED IN A SEPARATE, CONFIDENTIAL FILE

000107

August 22, 1991

Ms. Mary Lee Pieper
Butler & Binion
1400 First Interstate Bank Plaza
1000 Louisiana
Houston, Texas 77002-5093

Re: Ella Warehouse Drums Site

Dear Ms. Pieper:

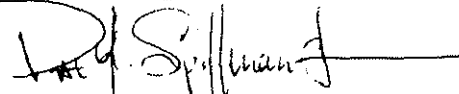
This letter is in response to your letter dated August 5, 1991 and our telephone conversation on Friday, August 9. In your letter, you stated that Butler & Binion represents Mr. Roy C. Hairston, Ms. Betty N. Ferguson, and North Loop West Industrial Park. You further stated that each of these parties is willing to negotiate with the United States Environmental Protection Agency, Region 6 (EPA) concerning the removal of drums at the Ella Warehouse Drums Site (site).

In our telephone conversation, you requested analytical data regarding the contents of the drums at the site to assist your client in preparing a work plan for the removal action. Included as an attachment to this letter are copies of analytical reports from the sampling of drum contents prepared for EPA by National Environmental Testing, Inc.

EPA Region 6 agrees to extend the negotiation period for this removal action until September 25, 1991. If EPA and the potentially responsible parties have not signed an Administrative Order on Consent by that date, EPA intends to terminate negotiations at that time.

If you have any questions regarding this letter, please call me at (214) 655-2120. Questions of a technical nature should be directed to Mr. John Martin, EPA's On-Scene Coordinator for the site.

Sincerely,



Pat Y. Spillman, Jr.
Assistant Regional Counsel

cc: Tony Robledo (6H-EC)

John Martin (6E-ES)

Enclosure

003138

CONFIDENTIAL DOCUMENT

LOCATED IN A SEPARATE, CONFIDENTIAL FILE

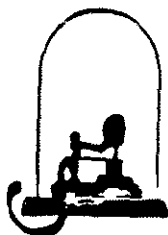
000139

CONFIDENTIAL DOCUMENT

LOCATED IN A SEPARATE, CONFIDENTIAL FILE

000100

cc: J. Martin - EPA OSC
cc: PAT



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 6
1445 ROSS AVE DALLAS, TX 75202



FACSIMILE REQUEST

and cover sheet

FROM THE **HAZARDOUS WASTE
MANAGEMENT DIVISION**

PLEASE PRINT IN BLACK INK ONLY

TO: *SID CHESNIN*

(713) 237-3201
Machine Number:

Office/Phone: *(713) 237-2088*

Verification Number: *IVA*

FROM: *TONY ROBLEDO*

(214) 655-6670
Phone:

Mail Code: *6H-EC*

SUPERFUND ENFORCEMENT
Office:

Date: *9-25-91*

NUMBER OF PAGES,
INCLUDING COVER SHEET *7*

PLEASE NUMBER ALL PAGES

INFORMATION FOR SENDING FACSIMILE MESSAGES

EQUIPMENT

PANAFAX UF-620

FACSIMILE NUMBER

FTS: 255-6460
COMM: (214) 655-6460

VERIFICATION NUMBER

FTS: 255-6790
COMM: (214) 655-6790

000101

RIEDEL ENVIRONMENTAL SERVICES, INC.

(dba RIEDEL-PETERSON ENVIRONMENTAL SERVICES)

1110 Howard Drive
Deer Park, Tx. 77536
Office 713/479-5295
Fax 713/479-6358

(713) 237-3201
call if have questions
TELECOPY COVER PAGE

This telecopy is being sent by an automatic telecopy machine.
Including this cover page there are 6 pages being transmitted.

TO: Tony Robledo (GH-EC)FROM: Kenneth D. TempleDATE: 9-25-91FAX NUMBER: (214) 655-6460COMMENTS: Material on FLLA Drum~~X~~ EPA COMMENTS: THIS SHOULD MATCHANALYTICAL DATA PREVIOUSLY SENT- TONY ROBLEDOR

If you do not receive all pages, please call (713) 479-5295.

000102

NET Lab No
168900

EWD 001 FLAMMABLE Solids (07)

Drums

D44	D35	D49
P6	D83	D53
D6	D61	D59
D43	D68	
D26	D63	

NET Lab No
168901

EWD 002 FLAMMABLE Liquids A (06)

Drums

D114	P56	D110	D46
D111	D55	D103	D41
P7	D105	D98	D76
P52	D107	D94	D87

NET Lab No.
168902

EWD 003 FLAMMABLE Liquids B (06)

D23	D66
D102X	D65
D71	D102
D80	P9

000133

NET Lab No.
168906

EWD 007 Combustible Solids (04)

Drums

P2

NET Lab No.
168907

EWD008 Combustible oil/w sludge (03)

Drums

D 109	D 79	D 75
D 15	D 73	D 31
D 64	D 1	D 25
D 3	D 67	
D 42	D 14	
D 116	D 10	

NET Lab No.
168908

EWD 009 Clear Oil (01)
PCB's

Drums

D 95
D 91

NET Lab No.
168909

EWD 010 Dirty Oil (01)

Drums

D 90 D 70
D 48 P 108

000134

NET Lab NO. EWD 016 Basic Liquid
168915

Drums

D18

NET Lab NO. EWD 017 Decon Liquid (2)
168916

55 GALLON Drum water

NET Lab NO. EWD 018 Combustible oil (02)
168917

Drums

D57

D96

D99

D8

P10

D16

D51

D78

D69

D37

P1

D77

D115

D93

D74

D40

D104

D38

D47

000135

NET Lab No.
168910

EWD 011 Sample (NA) (II)

Drums

D2 D50
D101

NET Lab No.
168911

EWD 012 Sample (NA) (II)

Drum

D34

NET Lab No.
168912

EWD 013 Sample (NA) (II)

Drums

D24

NET Lab No.
168913

EWD 014 Sample (NA) (II)

Drums

D112

D27

NET Lab No.
168914

EWD 015 Decon Liquid (I)

55 GALLON (Decon Water drum)

CONFIDENTIAL DOCUMENT

LOCATED IN A SEPARATE, CONFIDENTIAL FILE

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UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION 6

1445 ROSS AVENUE, SUITE 1200

DALLAS, TEXAS 75202-2733

October 3, 1991

VIA TELECOPY: 713-237-3201

Mr. Sidney Chesnin
Butler & Binion
1600 First Interstate Bank Plaza
1000 Louisiana
Houston, Texas 77002-5093

Re: Ella Boulevard Warehouse Site


Dear Mr. Chesnin:

On August 22, 1991, EPA provided you with analytical reports on the contents of drums located at the Ella Boulevard Warehouse site (site). On September 25, EPA provided you a list of drum numbers correlating the composite sampling data previously provided with the numbers on the drums. Enclosed with this letter is a summary of the drums currently located at the site.

The enclosed summary is labeled "draft" because EPA's contractor has not fully processed all of the information in the summary through its QA/QC procedures. However, this summary and the analytical data previously forwarded to you should assist your client in preparing a proposal for removal and disposal of the drums and other materials at the site.

Please be advised that it is now past the September 25 deadline previously agreed to as the final date for negotiating the terms of an Administrative Order on Consent for a removal action at this site. Should you have any questions concerning this letter, please contact me at (214) 655-2120. Questions of a technical nature should be directed to the On-Scene Coordinator for the site, John Martin, at (214) 655-2275.

Sincerely,



Pat V. Spillman, Jr.
Assistant Regional Counsel
United States Environmental Protection Agency

Enclosure

cc: Mr. Tony Robledo
Superfund Enforcement Branch

Mr. John Martin ✓
Emergency Response Branch

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211a Blvd. MP Warehouse Drum
Drum Summary

Drum Sample #	Haz Class	Size Description	Group	Analytical Parameters	Likely Disposal Options
			S1 PCB	Flash Point d PCB Screen MSL Metals	Deep Well Injection INCINERATION Stabilization and Hazardous Landfill
72	Non-char. liq.	55 thick dark oil/combustible	S2	Flash Point	
97	Non-char. liq.	30 thin oil/paint	Combust	Reactivity CM, Sulfide	Deep Well Injection
1003	Non-char. liq.	5 l pail inside 5 gal pail	v/o sludge	PCB Screen	Fuel Blending
29	Non-char. liq.	55 lt oil/buy sludge		MSL Metals	Stabilization and Hazardous Landfill
49 Debris	Flammable Sol.	55 steel wool		Total Organic Halogen	
59 Debris	Flammable Sol.	55 bottles		Volatiles 8240	
100 Debris	Non-char. sol	85 nuts/bolts/pipe		SemiVolatiles 8270	
1006 Debris	Non-char. sol	5 solid waste/rags & rubber hoses		Pesticides 8080	
2 Na	Flammable Sol.	55 Na metal/basic solution		Herbicide 8150	
24 Na	Flammable Sol.	55 Na metal/lt oil			
27 Na	Flammable Sol.	55 Na metal/lt oil/heavy sludge	S3	Flash Point	
32 Na	Flammable Sol.	55 Na metal blocks/lt oil	Combust	Reactivity CM, Sulfide	Deep Well Injection
34 Na	Flammable Sol.	55 Na metal/lt oil/heavy sludge	v/ sludge	PCB Screen	Stabilization and Hazardous Landfill
50 Na	Flammable Sol.	55 Na metal/bag filters		Total Organic Halogen	
58 Na	Flammable Sol.	55 Na metal/grey bricks in oil		MSL Metals	
112 Na	Flammable Sol.	55 Na oil mix		Volatiles 8240	
12 React	Non-char. sol	55 rags & insulation		SemiVolatiles 8270	
13 React	Non-char. liq.	85 PPE trash		Pesticides 8080	
39 React	Non-char. sol	55 rags/insulation/sample vials		Herbicide 8150	
53 React	Flammable Sol.	55 Disk filters			
82 React	Non-char. liq.	55 PPE filters	S4	Flash Point	Incineration
101 React	Non-char. sol	55 Na metal/trash	Combust	pH	
48 S1	Flammable Sol.	55 PCB's/dark liquid	solid	MSL Metals	
70 S1	Flammable Liq.	55 PCB's oil/sludge		Volatiles 8240	
71 S1	Flammable Liq.	55 PCB's oil		SemiVolatiles 8270	
90 S1	Flammable Liq.	55 J		Pesticides 8080	
91 S1	Flammable Liq.	55 PCB's lt oil/sludge		Herbicide 8150	
95 S1	Flammable Liq.	55 PCB's lt oil/filter media			
108 S1	Flammable Liq.	55 Na oil mix/sludge	S5	Flash Point	Stabilization and Hazardous Landfill
21 S10	Non-char. sol	85 rags	Basic	pH	
86 S10	Non-char. sol	55 thick sludge	solid	MSL Metals	
89 S10	Non-char. liq.	55 dark oil/paper		Total Organic Carbon	
18 S11	Basic Liquid	55 dark liquid			
8 S2	Non-char. liq.	55 oily liquid	S6	Flash Point, BTU	Incineration
16 S2	Non-char. liq.	55 oily liquid	Flammable	Reactivity CM, Sulfide	Fuel Blending or Substitution
37 S2	Non-char. liq.	85 liquid	liquids	PCB Screen	
38 S2	Non-char. liq.	55 liquid		MSL Metals	
40 S2	Non-char. liq.	55 liquid		Total Organic Halogen	
47 S2	Non-char. liq.	55		Volatiles 8240	
51 S2	Non-char. liq.	55 Na oil mix		SemiVolatiles 8270	
57 S2	Non-char. liq.	5 oily liquid		Pesticides 8080	
69 S2	Non-char. liq.	55 dark thick oil		Herbicide 8150	
69 S2	Non-char. liq.	55			
69 S2	Non-char. liq.	55	S7	Flash Point, BTU	Incineration
74 S2	Non-char. liq.	55 lt oil/dark sludge	Flammable	Reactivity CM, Sulfide	Fuel Blending or Substitution
77 S2	Non-char. liq.	55 thin oil	liquids	PCB Screen	
78 S2	Non-char. liq.	55 thin yellow oil		MSL Metals	

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93 S2	Non-char. liq.	55 bags/charcoal/filters		Volatiles 8240	
96 S2	Non-char. liq.	55 thin oil		SemiVolatiles 8272	
99 S2	Non-char. liq.	55 oily liquid		Pesticides 8080	
104 S2	Non-char. liq.	55 Na oil mix/oily liquid		Herbicide 8150	
115 S2	Non-char. liq.	55 oily liquid			
1001 S2	Non-char. liq.	1	S8	Flash Point	Incineration
1010 S2	Non-char. liq.	5 oily liquid	Flammable solids	Reactivity CM, Sulfide	
1 S3	Non-char. liq.	55 combustible		HSL Metals	
3 S3	Non-char. liq.	55 glassware		Total Organic Halogen	
14 S3	Non-char. liq.	55 oily liquid		Volatiles 8240	
15 S3	Non-char. liq.	55 oily liquid		SemiVolatiles 8270	
25 S3	Non-char. liq.	55 combustible/slightly water reactive		Pesticides 8080	
31 S3	Non-char. liq.	85 combustible/liquid/heavy sludge		Herbicide 8150	
42 S3	Non-char. liq.	55 lt oil/thick sludge			
64 S3	Flammable Sol.	55 thick heavy sludge	S9	Flash Point	
67 S3	Non-char. liq.	55 oil/dark sludge	NCS solid	Reactivity CM, Sulfide	Nonhazardous Landfill
73 S3	Non-char. liq.	55 thick dark oil/combustible		HSL Metals	Stabilization and Hazardous Landfill
75 S3	Non-char. liq.	55 oily water substance		Total Organic Halogen	
79 S3	Non-char. liq.	55 thin oil/thick sludge		Total Organic Carbon	
109 S3	Non-char. liq.	55 Na oily liquid			
116 S3	Non-char. liq.	55 oily liquid	S10	Flash Point	Nonhazardous Landfill
10 S3-Na	Non-char. liq.	55 oily substance/combustible	NCS liquid	Reactivity CM, Sulfide	Stabilization and Hazardous Landfill
1002 S4	Non-char. liq.	5		HSL Metals	
9 S5	Basic Solid	55 Bag type filters		Total Organic Halogen	
11 S5	Basic Solid	55 Bag type filters		Total Organic Carbon	
19 S5	Basic Solid	55 Bag type filters			
30 S5	Basic Solid	55 Gray Powder Bag Filters	S11	Flash Point	Stabilization and Hazardous Landfill
106 S5	Basic Solid	55 White Blocky Substance	Basic	Reactivity CM, Sulfide	
113 S5	Basic Solid	55 White Solid Bricks	Liquid	HSL Metals	
41 S6	Non-char. sol	55 air hose/absorbent		Total Organic Halogen	
52 S6	Flammable Liq.	55 oil/hvy sludge		Total Organic Carbon	
55 S6	Flammable Liq.	55 Na oil mix s			
56 S6	Flammable Liq.	55 oily liquid			
76 S6	Flammable Liq.	55 thin oil			
87 S6	Flammable Liq.	55 dark oil			
94 S6	Flammable Liq.	55 lt oil/sludge			
98 S6	Flammable Liq.	55 Na oil mix/sludge			
103 S6	Flammable Liq.	55 Na oil mix/sludge			
105 S6	Flammable Liq.	55 Oily liquid/sludge			
107 S6	Flammable Liq.	55 Oily liquid			
110 S6	Flammable Liq.	55 Na oil mix			
111 S6	Flammable Liq.	55 Oily liquid/sludge			
114 S6	Flammable Liq.	55 Oily liquid			
1007 S6	Flammable Liq.	5 Na oil mix rags			
23 S7	Flammable Liq.	55 Sludge/liquid			
65 S7	Flammable Liq.	55 oil tan sludge			
66 S7	Flammable Liq.	55 oil tan sludge			
80 S7	Flammable Liq.	55 bag filters/rags			
102 S7	Flammable Liq.	55 Na oil mix			
1009 S7	Flammable Liq.	5 PCB's lt oil			
6 S8	Flammable Sol.	55 brown material			
26 S8	Flammable Sol.	55 tape debris			
43 S8	Flammable Sol.	55 bag filters debris			
44 S8	Flammable Sol.	55 bag filters debris			
61 S8	Flammable Sol.	55 sand			
63 S8	Flammable Sol.	55 bags/absorbent/heavy sludge			

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68 S8	Non-char. sol	55 dark soil like substance
83 S8	Flammable Sol.	55 filter/rag
1006 S8	Flammable Sol.	5 various colored crystals
4 S9	Non-char. sol	55 sand & charcoal briquettes
5 S9	Non-char. sol	55 sand & charcoal briquettes
7 S9	Non-char. sol	55 twelve inch filter
17 S9	Non-char. sol	55 dark powder
20 S9	Non-char. sol	55 rags/filter/insulation
22 S9	Non-char. sol	55 rags/small plastic bottles
28 S9	Non-char. sol	55 powder/crystals
33 S9	Non-char. sol	55 gray powder/rag
35 S9	Non-char. sol	85 charcoal briquettes
36 S9	Non-char. sol	55 dark powder
45 S9	Non-char. sol	55
46 S9	Flammable Liq.	30 solvents/sludge
54 S9	Non-char. sol	55 Brown Sand/debris
60 S9	Non-char. sol	55 hoses/empty buckets
62 S9	Non-char. sol	55 red lumpy sand
81 S9	Non-char. sol	55 rags & dirt
84 S9	Non-char. sol	55 insulation
85 S9	Non-char. sol	55 sand/hose
88 S9	Non-char. sol	55 sludge/glass/bottles
92 S9	Non-char. sol	55 sand in drum/vinqueen
1004 S9	Non-char. sol	5 Oil-Dry/trash
1005 S9	Non-char. sol	3 black crystals



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION 6

1445 ROSS AVENUE, SUITE 1200

DALLAS TEXAS 75202-2733

Community Relations Plan
Ella Warehouse Drums Site
Houston, Harris County, Texas

Overview of Community Relations Activities

This community relations plan identifies issues and concerns of the community regarding on-site removal actions and activities at the Ella Warehouse Site in Houston, Harris County, Texas. It also outlines community and public relations activities that were conducted prior to and during the completion of this removal activity.

The community relations plan and activities have been developed as the on-site activities were being completed. The purpose of this plan is to relate those community relations activities and plans for this site.

Site Description

The Ella Warehouse Site is located at 3308-0 Ella Boulevard, Houston, Harris County, Texas. The warehouse space with the drums is part of a three-building strip center located on Ella Boulevard. The site is located in space 3308-0, which is located almost in the center of the warehouse building. It is bounded on the east and west sides by other lease-space businesses. Separation of the space is by sheet metal/sheetrock wall. The south side of the building has parking space and a driveway.

The site was the storage location of an experimental mobile dechlorination unit, feed stock materials, and waste materials used in the destruction of poly-chlorinated biphenyl (PCB) wastes. The mobile unit had been removed from the site prior to the investigation of the site by EPA, but the drummed feed stock, hazardous waste and waste debris materials were abandoned. The PCB destruction mobile unit had used metallic sodium to dechlorinate the PCB oils. Flammable liquids found in some of the drums may have been used to enhance the dechlorination, clean the equipment, or may be by-product of the reaction.

The company permitted to operate the mobile unit was Chemical Decontamination Corporation (Chem Decon) of Birdsboro, Pa. Chem Decon had a joint venture with a company called R2P2. Chem Decon operated the mobile unit based on a January 1985 conditional approval from the EPA's Office of Toxic Substances to dispose of

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PCBs. In March of 1988, the EPA did not renew the Chem Decon PCB disposal permit. This was done in part to the fact that EPA had been unable to contact Chem Decon and expressed concerns about the possibility of permitting future operations.

EPA's Emergency Response Branch (ERB) received notification on November 20, 1990, from the Houston Health Department of approximately one hundred-thirty (130) drums abandoned in a warehouse. It was reported that most of the drums were labeled "Hazardous Waste D003", "PCB's", "Sodium Metal in Oil", and "Dangerous When Wet". The ERB was requested to respond as soon as possible to evaluate the situation. The ERB action was coordinated with EPA's Office

After initial reconnaissance of the warehouse space on November 21, 1990, it was determined that an emergency response action should be initiated. The emergency response was necessary due to the extremely hazardous nature of the suspected incompatible materials and the close proximity of light industrial business and residences. The OSC activated the Emergency Response Cleanup Services Contractor (ERCS) and arrived on site to begin stabilization and characterization of drum contents on November 30, 1990.

The warehouse was found to contain one hundred and sixteen (116) drums and ten (10) pails. The drums were crowded into the corner of warehouse space and they were intermixed with various combustible materials such as a large wooden crate filled with books and users manuals. A few of the drums were placed on top of other drums. The hazard characterization (hazcatting) results showed that the contents of the drums were varied mixtures of liquids and solids with a combination of hazardous characteristics including caustic, flammable, reactive, and chlorinated compounds. Two samples for reactivity and five samples for PCBs were submitted to the EPA Houston Laboratory for analysis. The reactive test results were positive producing a very caustic solution (pH of 12 and 13) and the three PCB samples had detectable limits of PCBs. The detectable PCB levels were 150, 190 and 31,400 ppm.

The two main substances of concern were metallic sodium and PCBs, which are defined as hazardous substances by section 101(14) of CERCLA. Also, the reactive sodium wastes are characterized hazardous wastes regulated by the Resource Conservation and Recovery Act (RCRA) and the PCB oils are regulated under the Toxic Substances Control Act (TSCA). The sodium and sodium sludge is highly reactive with water and the atmosphere. The PCBs were improperly stored and posed a substantial health risk if involved in a fire. Many of the drummed wastes were flammable. The poorly stored sodium waste drums intermixed with these materials created a high potential for fire/explosion. A chemical fire and resultant poisonous gas emission would pose a substantial health threat to nearby businesses and neighborhoods.

Nature of the Threat

The site contained 116 drums and 10 five-gallon pails of hazardous wastes, hazardous substances and contaminated debris. The drums were abandoned in a warehouse which is not a proper storage, treatment, or disposal facility. The highly reactive and corrosive characteristics of some of the drums' contents coupled with deterioration of containers, high humidity of the locality, non-compatible wastes, high human toxicity of the contents, and the densely populated area of the warehouse's vicinity, creates a high potential for the release and a serious health threat to the surrounding community.

Community Background

Community Profile

The warehouse space is located in the North West part of Houston, Texas, at 3308-0 Ella Road. This location is approximately 1/2 mile north of Interstate 610. The site is located in an industrial park composed mainly of small businesses and is immediately surrounded by active businesses which occupy neighboring warehouse spaces. Also, several fast food restaurants and retail stores are located nearby. The warehouse space is close to a populated area with the nearest resident being less than three hundred feet (300') away and a high school less than one (1) mile away.

Key Community Concerns and Issues

There have not been any major concerns expressed by the public regarding this removal action. General questions were asked by the public during the removal about the removal action. Why was it necessary? What was going on? Why were the cleanup personnel wearing protective gear? These types of questions were answered by site personnel, with site activities and safety procedures being discussed as well.

Highlights of the Program

The community relations program for the Ella Warehouse Drum Site Removal Action has met the public's need for information. In an effort to inform the community the On-Scene Coordinator (OSC) has completed a program of coordination and notification. Site activities and safety considerations and procedures were discussed with the local community, business persons and City and State Officials. (Attachment 1)

Attachment 1
Ella Warehouse Drums Site
Houston, Harris County, Texas
Contact List

City of Houston - Fire Department
City of Houston - Police Department
City of Houston - Hazmat Team
City of Houston - Health Department
Texas Water Commission
Local Businesses
Local Community
News Media

